MY LIFE AMONG THE WILD BIRDS

IN SPAIN

WILLOUGHBY VERNER

MY LIFE AMONG THE WILD BIRDS IN SPAIN

DEDICATED

BY GRACIOUS PERMISSION

TO

Her Majesty

QUEEN VICTORIA-EUGÉNIE

OF SPAIN

BY HER MOST HUMBLE AND

OBEDIENT SERVANT

Willoughby Verner

ENTERING NEST OF GRIFFON VULTURE.

MY LIFE AMONG THE WILD BIRDS IN SPAIN

BY

COLONEL WILLOUGHBY VERNER

(Late Rifle Brigade)

Author of

"Sketches in the Soudan," "The Military Life of H.R.H. George, Duke of Cambridge."

London

JOHN BALE, SONS & DANIELSSON, LTD.

OXFORD HOUSE

83-91, GREAT TITCHFIELD STREET, OXFORD STREET, W

1909

SMITHSONIAN INSTITUTION
331542
JUL 22 1946
NATIONAL MUSEUM

598.2942
N53

My thanks are due to the Editor of the *Saturday Review* for permission to reproduce portions of certain Chapters in this book which have appeared in that *Review*.

PREFACE.

I HAVE been in the habit of keeping a journal of natural history since I was fourteen years of age; jottings and notes on the habits and description of beasts, birds, reptiles, fishes and insects, but especially birds. And I early took to illustrating my journals by sketches in pen and ink and water-colours. As far back as 1874 I began to turn my attention especially to the fauna of Southern Spain. From that time, with sundry breaks owing to my military and other duties, I have lived much in that region and during the last few years have regularly wintered there. I realize more than ever that it is only by living amongst them that any true idea of the ways and nature of wild animals can be got. So it has seemed to me worth while to publish this account of my life in the wilds of Andalucia.

WILLOUGHBY VERNER.

Hartford Bridge,
Winchfield,
December, 1908.

CONTENTS.

PREFACE ...

CONTENTS ...

LIST OF ILLUSTRATIONS ...

I.—Getting Ready.

CHAPTER I.—THE STUDY OF WILD BIRDS ...

,, II.—TRAVEL AND EQUIPMENT ...

,, III.—SKETCHING AND PHOTOGRAPHY ...

,, IV.—ON CLIMBING IN GENERAL ...

,, V.—TREE CLIMBING ...

,, VI.—CLIFF CLIMBING ...

II.—In a Spanish Laguna.

CHAPTER I.—A DAY IN A LAGUNA ...

,, II.—THE HARRIERS ...

,, III.—THE COMMON CRANE (*Grus communis*) ...

III.—Across the Plains.

CHAPTER I.—A RIDE ACROSS THE VEGA ...

,, II.—THE GREAT BUSTARD (*Otis tarda*) ...

,, III.—THE LITTLE BUSTARD (*Otis tetrax*) ...

IV.—Through the Woodlands.

CHAPTER I.—A DAY IN THE CORK WOODS ...

,, II.—THE KITES AND HAWKS ...

,, III.—THE BOOTED EAGLE (*Nisaëtus pennatus*) AND THE SNAKE EAGLE (*Circaëtus gallicus*) ...

,, IV.—THE WHITE-SHOULDERED EAGLE (*Aquila adalberti*) ...

,, V.—THE BLACK VULTURE (*Vultur monachus*) ...

V.—Along the Sea-Cliffs.

PAGE
CHAPTER I.—A Ride to Trafalgar 233
,, II.—The Common Raven (*Corvus corax*) 241
,, III.—The Osprey (*Pandion haliaëtus*) 251

VI.—Amid the Sierras.

CHAPTER I.—A Day in the lower Sierra 265
,, II.—The Lesser Birds of the Sierra... 280
,, III.—In the upper Sierra 294
,, IV.—The Eagle Owl (*Bubo ignavus*) 311
,, V.—Bonelli's Eagle (*Nisaëtus fasciatus*)... 330
,, VI.—The Golden Eagle (*Aquila chrysaëtus*) 355
,, VII.—The Egyptian Vulture or Neophron (*Neophron percnopterus*) 372
,, VIII.—The Griffon Vulture (*Gyps fulvus*) 387
,, IX.—The Bearded Vulture (*Gypaëtus barbatus*) 407
,, X.—The Bearded Vulture (*continued*) 437

LIST OF ILLUSTRATIONS.

I. Getting Ready.

PAGE

Entering a Griffon Vulture's nest. *Plate* ... ... Frontispiece.
A Nesting-place of the South African Crow ... 19
Pack horse with travelling kit 27
Quarters during a birdsnesting expedition... 37
Egg of Griffon Vulture (a long time exposure). *Plate* ... 38
A climb for a photograph 41
Photographing a nest on a cliff 42
Nest of Griffon on open ledge (a quick exposure) 44
A Vulture's nest in deep shadow. 46
"The back of the Rock" (Gibraltar) 53
Climbing a big Spanish oak tree by the aid of a pendent bough ... 63
Climbing a tall fir tree with the aid of a rope ... 68
A clear drop. *Plate* 71
(*Drawn by Ida Verner from photographs.*)
Entering a nest inaccessible from above and from below 73
Climber in canvas sling ready to descend a cliff 81
Method of carrying a long piece of rope during a climb ... 83
The Laja del Ciscar 84
On the face of the Laja del Ciscar 88

II. In a Spanish Laguna.

White Stork (*Ciconia alba*). *Plate* 96
Nest of Purple Heron 97
Eggs of Purple Heron 98
Marsh Harrier (*Circus æruginosus*). *Plate* 101
Nest of Marsh Harrier 103
Young Marsh Harriers in nest. *Plate* 104
Common Crane (*Grus communis*). *Plate* ... 107
Nest of the Common Crane 110
Nest of the Common Crane (nearer view) ... 113
Retriever in Crane's nest 116
Eggs of the the Common Crane 118

III. Across the Plains.

PAGE

A River in the Plains: evening 124
Great Bustard (*Otis tarda*). *Plate* 131
Nest of Great Bustard in bean-field 139
Eggs of Great Bustard 143
After a Great Bustard Drive 146
Little Bustard (*Otis tetrax*). *Plate* 149
Nest and Eggs of Little Bustard 152
Eggs of Little Bustard 154

IV. Through the Woodlands.

Goshawk (*Astur palumbarius*). *Plate* 156
A glade in the Cork Woods 162
Black Kite (*Milvus migrans*) and Red Kite (*M. ictinus*). *Plate* ... 169
Nest of Black Kite in cork tree 171
Nest and Eggs of Black Kite 172
Booted Eagle (*Nisaëtus pennatus*). *Plate* 178
Nest of Booted Eagle in Spanish oak 179
Egg of Booted Eagle 181
Nest of Snake Eagle near summit of cork tree 188
Nest and Egg of Snake Eagle 191
Egg of Snake Eagle 192
Young Snake Eagle, aged 1 week 193
Young Snake Eagle annoyed at being photographed ... 194
White-shouldered Eagle (*Aquila adalberti*). *Plate* 196
Nest of White-shouldered Eagle in Spanish oak 205
Black Vulture (*Vultur monachus*). *Plate* 210
Black Vulture leaving nest (No. 1.) 218
Doroteo reaches the first stage, 40 ft. from ground 220
Doroteo nearing the nest 222
Author in Black Vulture's nest 224
Nest and Egg of Black Vulture 225
Black Vulture leaving nest (No. 2.) 227
One of the Siete Picos, Sierra de Guadarrama 230

V. Along the Sea Cliffs.

A summit of the Sierra above Trafalgar Bay 234
The Strand of Trafalgar... 238
Common Raven (*Corvus corax*). *Plate* 241
A Raven's nest in a deep fissure 247
Raven's eggs 249
Osprey (*Pandion haliaëtus*). *Plate* 251
An Osprey's stronghold 257
Descent to an Osprey's nest 259
The Ospreys' cliff 261
An Osprey's nest 263

VI. Amid the Sierras.

Rock sepulchres and cistus 270
A Vulture's cliff 272
The reverse slope of the summit of the cliff 275
Sandstone cavern above pool in bed of torrent 283
Sandstone cavern near a summit of the lower Sierra 288
Cavern showing cavities formed by sand-blast 291
One of the old Moorish villages in the upper Sierra 297
A gorge in the upper Sierra 299
La cueva del Gato (whence issues a subterranean stream) 300
A big cavern in the upper Sierra (point where stream enters) ... 302
A summit in the Serrania de Ronda 306
Eagle Owl (*Bubo ignavus*). *Plate*... 311
Nest of Eagle Owl on terrace on cliffs 316
Nest of Eagle Owl in cavern 319
Young Eagle Owls in courtyard 320
Eggs of Eagle Owl in nest in cavern 321
Profile of Eagle Owl's crag 322
Young Eagle Owls in nest 324
Descent to nest of Bonelli's Eagle. *Plate*... 330
Nesting-place of Bonelli's Eagle 334
Nest of Bonelli's Eagle... 341
Eggs of Bonelli's Eagle 344
Nest and eggs of Bonelli's Eagle 350

PAGE

Young Bonelli's Eagle in nest showing fight 351
Golden Eagle (*Aquila chrysaëtus*). *Plate* 354
View from a Golden Eagle's nest 363
Nest and eggs of Golden Eagle 365
Nest and egg of Golden Eagle (site "B")... 367
Nest and eggs of Golden Eagle. *Plate* 368
Eggs of Golden Eagle 370
Egyptian Vulture or Neophron (*Neophron percnopterus*). *Plate* ... 372
Neophron's nest with dead rat in larder 375
La cueva del Cuervo (nesting-place of Neophron) 377
Neophron's nest in a narrow fissure 379
A Vulture's cavern 381
Nest and eggs of Egyptian Vulture. *Plate* 382
A Neophron's nest among boulders 383
Griffon Vulture (*Gyps fulvus*). *Plate* 387
Nest of Griffon Vulture in a cavern 392
Nest of Griffon Vulture in a deep crevasse. *Plate* 394
Young Griffon Vulture, about 4 days old 396
Young Griffon Vulture, about 2 weeks old, feigning death 397
Young Griffon Vulture, about 3 weeks old 399
Young Griffon Vulture, about 6 weeks old, feigning death 401
Young Griffon Vulture, about 8 weeks old: the offensive-defensive ... 402
Bearded Vulture (*Gypaëtus barbatus*). *Plate* 406
Bearded Vulture soaring around summit of crag 416
Quebranta-huesos, the Bone-breaker, at work. *Plate* 434
The Bearded Vulture's cliff, nest No. 2. *Plate* 440
Young Bearded Vulture, photographed at 24 in. distance 443
Young Bearded Vulture ,, ,, 18 in. ,, . . 444
Young Bearded Vulture attacks camera 446
The Bearded Vulture's cavern. *Plate* 448
Egg of Bearded Vulture, nest in dark cavern 455
General view of Bearded Vulture's nesting station ... end of book.

HEAD-PIECES AND TAIL-PIECES TO CHAPTERS.

Taking Weaver Birds' nests in Nile Expedition 1
Sailing Lifeboat off Irish Coast 22
A "time-exposure" on face of a cliff 23
Arrieros and capsized mule 28
A Griffon Vulture's Crag, Tangier in the distance 39
Gibraltar from the Sierra west of Algeciras 47
Eluding Bluejackets in H.M.S. "Simoom" 48
Climb round "the back of the Rock" 57
The Raven's nest in the corkscrew pine 58
Climbing Irons, Casting-line and Lead 70
A slippery hitch on face of a cliff 71
Along a ledge to an Eagle's nest 90
Wading in a Laguna 91
Grey-lag Geese flighting at sundown 100
Marsh Harrier hunting over Laguna 101
Cranes on line of migration 106
Reconnoitring a Crane's marsh 107
Crane simulating disablement 122
Mounted cattle-guard on the *Vega* 123
Chased by a *Toro bravo* 130
Great Bustard falling to shot 131
A horse-load of Great Bustard 148
A cattle-herd on the *Vega* 149
Little Bustard on the wing 155
An old cork-oak tree 156
Gibraltar from the Cork Woods 165
Red Kite on the wing 166
Jimena de la Frontera 177
Snake-Eagle 178
Egg of Snake-Eagle 195
White-shouldered Eagle's nest in marsh 196
Chased up a tree by a young bull 209
Black Vulture's nest in lofty pine 210
Photographing Black Vulture's nest on summit of pine 232
The cliffs of Trafalgar 233

PAGE

Spanish Falucho off Cape Trafalgar 240
A Raven's two-fronted residence 241
Gibraltar from the coast of Morocco 250
Sea-caves at the back of the Rock 251
Nest and eggs of Osprey 264
A natural tunnel through a Vulture's cliff 265
Cape Spartel and Atlantic from the Sierra 279
Lowering climber single-handed 280
Nest of the Black Wheatear or *Pedrero* 293
A Bearded Vulture's nesting-place 294
Gibraltar from the Sierra near Gaucin 310
A descent to Eagle Owl's nest without a rope 311
View from Eagle Owl's nest in cavern 329
Bonelli's Eagle 330
Photographing nest of Bonelli's Eagle 354
Descent to Golden Eagle's nest with rope 355
Egg of Golden Eagle 371
Egyptian Vulture and nest 372
The Sierra above the ruins of Belon 386
A wounded Griffon Vulture 387
Griffons fighting over carcass in water 406
Clearing a jambed rope on a cliff 407
Quebranta-huesos, the Bone-breaker 436
A false descent on a big cliff... 437
Bearded Vulture looking out of nesting-place 457

I.—*GETTING READY.*

CHAPTER I.

THE STUDY OF WILD BIRDS.

Popular view of birdsnesting—The true naturalist and the destroyer of life—The egg-dealer *versus* the birdsnester—Bird destruction *versus* egg-taking—A love of birds a matter of heredity—Keeping cage-birds—Training Hawks and Falcons—My first nests—First lessons in bird-watching—The training of a field naturalist—First go to Southern Spain—Meet Lord Lilford—and Colonel Irby—"The Ornithology of the Straits of Gibraltar"—Crown Prince Rudolf of Austria's visit—Birdsnesting at Home and Foreign Stations—In Nile Expedition, 1885—In South African War, 1899—Literature dealing with Spanish bird-life—General arrangement of book.

"THANK Heaven, I'm not reduced to birdsnesting!"

It is many years since these words fell on my ears. That they were uttered by an individual of no importance is immaterial; for me their interest and value lie in the fact that they express to perfection and in the briefest possible manner the attitude of the vast bulk of one's friends towards the branch of ornithological study which I have pursued with unremitting determination ever since I was a very small lad.

The immediate cause of this profound remark is not without interest and may perhaps serve to point a moral to those who

habitually deride that which is above their intelligence. At this time my regiment was quartered in Dublin; it was in June. Owing to the usual military exercises and work carried on during the summer months it was not easy to get away from the garrison, save now and again for a couple of days and very often that could not be managed. The inevitable consequence was that a large number of young officers possessed both of the means and the desire to go on endless rounds of amusement found themselves unable to take advantage of the seductive pleasures open to them. It is one of the curses of peace-soldiering that the work is so calculated or rather miscalculated as to bring the minimum amount of advantage to the Service and the maximum amount of worry and waste of time to those engaged in its execution. Under such conditions anything which can conduce to giving officers and men a change from the red-tape and routine is of great value and the surest antidote to an attack of "grousing."

In accordance with the habit of my lifetime, since I had arrived in Dublin I had been keenly on the look-out for some fresh locality where I could visit some of my beloved birds and learn more about their nesting habits and I had recently obtained permission from the owner of a rocky island off the east coast of Ireland to visit it with that object in view. Accordingly I went to our barracks to enlist recruits for a forty-eight hours' expedition and had no difficulty in getting all I required. It was whilst engaged in the necessary instructions as to food, equipment and ropes, that a sapient young officer made the remark with which this story begins, prior to calling for another cigarette and strolling out of the anteroom. The reproof thus conveyed to the party of miserable birds-nesters was none the less pointed in that its author proceeded to the Yacht Club at Kingstown from the window of which he could look at other people's yachts at anchor and at stated intervals bore his friends by his views on the length of the boom of the *Britannia* or some other abstract nautical topic.

Suffice to say, my "reduced" party who had not been too proud to reduce themselves temporarily to my level accompanied me to the island where we stopped for a night. We were rewarded for our two days explorations by some of the most splendid scenery, innumerable wild flowers and some grand cliffs where Guillemots, Razorbills, Puffins and various Gulls nested in profusion. The following day it blew too hard on the land for our chartered fishing-smack to come out and take us off, but this was but an added joy for it resulted in my obtaining the use of the coastguard's lifeboat and sailing her under close-reefed lug with the wind about three points on our quarter through a glorious sea to a small haven on the mainland under our lee.

The memory of that delightful expedition (and it is in very truth only one of many hundreds in which I have taken part) is ever fresh and I can still see the myriads of rock birds wheeling around the precipices on the face of which we scrambled and hear the roar of their combined ten thousand cries. Nor have I forgotten the feel of the helm of the lifeboat as she strove to run off a big following sea. Those of my brother officers who accompanied me on that trip speak with enthusiasm of all they saw to this day. So I am content to think that although we could not smoke cigarettes or look at the *Britannia's* boom we saw other things which gave one an added joy in life.

Those who read these remarks on birdsnesting may very naturally ask whether it is my aim and object to induce everybody to become hunters and robbers of nests. I need hardly say that nothing could be further from my intentions and that I should view with dismay any serious increase in the numbers of those who harry and harass wild birds especially the wild birds of the British Islands during the nesting season. Should the story of my birds-nesting experiences therefore be likely to lead to this undesirable result, nothing would induce me to give it to the world. But all

my experiences lead me to an exactly opposite conclusion, for I am positive that the more men take a rational interest in the study of natural history in all its branches, the less desirous are they, without good and sufficient reason, to do aught which may tend to the destruction of rare and beautiful things whether they be animals, birds, insects or flowers. I have myself gone through all these phases and watched them over and over again in others. To cite my own experiences : a beginner, I was anxious to see and handle, skin and preserve any rare wild bird. This naturally led to the slaying of those that came within my reach. I had no one to dissuade me from such a course. Further in those days there were no good coloured illustrations of birds available for the ordinary student and the only way to get an exact idea of the colouring and plumage of a bird was to kill it. Very soon however I realized what a mistake it was to destroy wild life merely to gratify my own curiosity about certain matters connected with it. Added to which, the absurdity and inutility of doing so gradually dawned upon me. I became painfully aware that stuffed birds, save those set up by a master-hand with all their natural surroundings, regardless of cost and of space occupied, were but pitiful objects. The late Mr. John Hancock of Newcastle, a great personal friend of my father, whom I had the privilege of knowing, first brought this home to me and when, some years later, I took a humble share in procuring and arranging some of the birds and nests for the British Museum (Natural History) I saw how utterly absurd it was—to put it on the lowest grounds—for the ordinary individual to attempt to form a collection of stuffed birds. As a consequence, for many years I have refrained from killing any birds save when required for collections like our National one or for some other well-accredited museum or for naturalists of the type of Lord Lilford who require specimens for legitimate scientific purposes.

So much for the birds themselves. Now for their nests, eggs

and young. If a collector of eggs restricts himself to taking the eggs he genuinely wants for his own collection or for those of his friends who may ask for a particular species, very little harm will follow. Unfortunately some birdsnesters seem incapable of restraining themselves and take all they find on the idle plea that they can "exchange" their superfluous specimens—a plea worthier of the postage-stamp collector than of the naturalist.

Even worse than the exchanging excuse is the habit of employing paid assistants to harry nests. Eggs thus taken are valueless, for such mercenaries naturally have no discrimination and sweep a whole district of every egg without remorse. I know of men who have boasted of taking over a thousand eggs of the rarer Waders, &c., in a week or so.

After all, the whole fascination of the art of nest-finding is the personal experiences of the seeker. To locate a wild bird, to study its habits, follow it to its nesting haunts and discover its secrets, are the points which give zest and interest to the occupation. If in addition the student can secure photographs of the birds or their nests or both, there is a fresh factor of permanency to the operation. Lastly if the quest of certain species leads a man to climb mountains, explore remote marshes or make adventurous sea trips, there is literally no limit to the variety of experiences which are comprised in the single word "birdsnesting."

For many years I have made it a rule to invite friends to come with me on my expeditions and so far from my having by these means added to the destroyers of bird-life, I am convinced I have done the opposite. In only one instance has my trust in such people been betrayed; one of my *quasi* pupils took to paying people to harry nests—an outcome of defective education and presumptuous ignorance of the subject.

On the other hand I have demonstrated to scores of men how much pleasure and instruction can be got from studying wild birds

in their haunts and further, how this pleasure can be gratified to the full without taking the eggs or young or slaughtering the parent birds.

A favourite excuse with students for taking bird-life or robbing a nest is the natural and reasonable desire to verify some point about which they are in doubt. In these cases as in most others, every man is the best judge of his own motives and innumerable cases may and do occur when such conduct is thoroughly justifiable. But I would plead for the birds that whenever possible they should be given the benefit of the doubt. The longer one lives the more one realizes how seldom it is necessary to destroy life. I can recall a case over twenty-five years ago when I found a small nest in some rank grass and brambles. It was clearly either that of the Willow Warbler or of the Chiff-chaff. To watch the bird and identify it as it re-entered its nest was impossible owing to its snake-like habits. To kill it was simple enough. The third way was to make a horsehair noose and adjust the loop over the entrance to the nest. In five minutes I had the bird fluttering in my hand, an undoubted Willow Warbler; next moment it was released. Where a species abounds and time presses, it may of course be reasonable to kill the old bird but this should be ever viewed as the last resource.

But I must explicitly disclaim any pretensions to merely being a bird-watcher, one who never molests a nest. I have robbed many nests, possibly those of more species than most people in proportion to the countries I have visited. But I have found most of them myself and taken nearly all of them with my own hands. The limits imposed by endeavouring to adhere to these two rules are much narrower than most people would imagine. In the few cases where I have departed from them it has been owing to pressure of time or the impossibility of my being in the district at the season when the eggs are laid. Take for example several

of the species which nest north of the Tweed; a country I have never visited save in the shooting season.

In this case I confess to numbering in my collection a few eggs taken by ornithological friends, who in return have received from me specimens from Spain which were for similar causes beyond their reach. But "exchanges" conducted on so much narrowed and well-defined a basis are not to be classed with the havoc wrought by the man who takes twenty or thirty sets of some rare bird's eggs, on the ground that some day in the future they may have a pecuniary value as media for "exchange," setting aside actual sale.

Your true birdsnester will ever view eggs obtained by exchange merely as stopgaps to fill the links between species he has taken himself, and which are to be weeded out, should fortune subsequently enable him to watch the birds and get the same eggs himself.

As to buying eggs, perhaps the only egg which can reasonably and legitimately be bought is that of the Great Auk, for it is clearly impossible to take it oneself or get others to take it.

It is not uncommon to hear men who are keen ornithologists but who for various reasons such as want of time or of opportunity, physical inability, lack of nerve or aught else, have never taken to the absorbing study of birds in their nesting haunts, decry the practice of taking eggs as certain to lead to the extermination of species: and at meetings of our scientific societies I have heard with some amusement such men describe themselves evidently with conscious pride to the audience as not being "egg stealers." That some of them were notorious and open ornithological evil livers and systematically destroyed the lives of hundreds of birds seemed not to enter into their minds at all. The historic result of killing the goose that laid the golden eggs is known to all. Save only a few species which exist in small colonies whose nests are easily found and eggs still

easily taken as for example the Sandwich Tern, it is safe to say that few birds have ever been exterminated by simply having their eggs taken.

It is where the slaughter of the old birds is made the objective that the danger of extermination comes in. Such was the fate of the Great Auk and the wingless birds of the Southern Hemisphere. But egging like everything else must be conducted on intelligent and reasonable lines.

On this point I venture to assert that I have possibly more practical experience than most ornithologists and for the simple reason that as this book will show it has chanced that I have had opportunities for visiting and re-visiting the same breeding stations of certain birds at frequent intervals for over thirty years.

Briefly, my experiences are that no amount of egging will ever drive away birds but that the moment the gun and trap are employed to slay the parents, there is grave risk of their disappearing altogether from the district. True it is that for a time, especially in a wild country like Spain, a bird may find a new mate to take the place of its dead consort; but the process cannot go on for ever.

Probably most readers of this book who are not ornithologists will be surprised on reading how nests are occupied by the same species year after year for an indefinite period, but it is the regular custom of the larger and easily recognized species such as Eagles and Vultures and it is one very easy of proof.

In only three instances since 1875 amongst hundreds of nests visited and dozens robbed do I know of the nesting species disappearing from localities. Every time this was due to the slaughter —not by me—of the parent birds, not to the taking of their eggs or young. Most usually when birds' eggs are taken they will soon nest again. I have proved that this is the custom with most of the larger Raptores. Even where the second laying is

taken these birds will merely shift to an alternative site for their next attempt the following year and no amount of harrying seems to deter them from trying again and again to nest in one of their three favourite spots—three is the usual number. But when gun and trap or worst of all poison is brought into play their days are numbered and the wanderer like myself on revisiting some wild spot finds the favourite nesting-places untenanted.

I may mention that my views on the comparative damage done by the destruction of birds and the robbing of their nests are cordially endorsed by Mr. F. C. Selous, the famous hunter of big game and enthusiastic birdsnester.

People have often asked me how, when, and why I acquired my love of birds and bird-life. The only reply I can give to this is that it is apparently a question of "heredity."

My grandfather was devoted to birds and some of the earliest pictures of birds I can remember were drawn and coloured by him in the early years of the last century. My father inherited the same taste, but in his case it took the form of enthusiastic fondness for keeping cage-birds of all sorts. In this he excelled to a marked degree, for him no species was too delicate or too difficult to tend, and although, as with all cage bird fanciers, his collection mostly consisted of Finches and Larks, he did not hesitate to keep and keep alive in health any soft-billed birds he took a fancy to. Blackcaps and Nightingales were numbered among those and I can recall more than one Nightingale which he kept in beautiful song in a small cage, no mean achievement. To accomplish this, some natural food was necessary and this want was met by a liberal supply of meal-worms which habitually escaped in his room and it was generally believed that it was due to the requirements of the Nightingales that a peculiar breed of cockroach was introduced into our house. But my father's great achievement in the keeping

of birds, so long as he had health and strength, was on an altogether higher plane than cage-birds. He was one of the band of falconers who during the years between 1845-60 practically revived the art of hawking in the British Isles. In the training of both hawks and falcons few surpassed him. His especial ally in this cause was the late Francis Henry Salvin who died in 1904.

The late Lord Lilford who was ardently devoted to falconry, although debarred by his sad infirmities for many years before his death from personally taking part in the sport, told me how when a lad he was taken by his father to Edinburgh Castle to see Captain William Verner (my father's) trained peregrines. This must have been about 1848.

From my earliest days I can recall seeing Peregrines, Merlins and Sparrowhawks, sitting, the former on their blocks, and the latter on a perch, fitted with jesses, swivel, bells and leash in approved fashion and I was taught from the time I could walk how to carry a trained hawk on the wrist.

I have dim recollections of a splendid Greenland falcon, of which I have a full-sized crayon portrait, drawn by a friend of my father. A trained Goshawk also figured largely in my early days and I well remember my father explaining to me how a sulky nature made it doubly hard to train this species.

The last falcons trained by my father were a Peregrine and three Merlins. With the latter we had some famous flights after Skylarks and also the Crested Larks in the vicinity of Boulogne-sur-Mer. It is interesting to note that the trained Merlin is frequently unable to cope with the Skylark save when the latter is moulting, since it mounts rapidly and gets right away, whereas the Crested Lark has a much less powerful flight. I remember my father's delight at finding in an old French book on Falconry in the days of Louis XIII., written early in the seventeenth century that the best and most sporting quarry at

which to fly an *émerillon* (Merlin) was the *cochevis*, or *alouette à grands chemins* (Crested Lark). He was doubly pleased at the success which attended his efforts and which proved the absolute correctness of the old writer. The last hawk I trained under my father's tuition was a Sparrowhawk, this was in 1868.

With regard to cage-birds, few men understood better the art of keeping them in health and in song. He was conversant with the songs of birds to a remarkable degree and for years was never without a good Woodlark and a Linnet or two, the two birds whose song he loved most.

This brings me to a curious phase in my father's bird experiments. He was an inveterate and enthusiastic breeder of mules (much to my horror as an embryo naturalist); not content with the usual crosses between Goldfinch and Canary he conducted all sorts of weird experiments, and induced Goldfinches, Bullfinches, Linnets and Greenfinches to mate with species other than their own. He also took an extraordinary interest in any accidental varieties of wild birds especially in those with some abnormal uniform coloration such as a pale yellow-brown Greenfinch, as well as in those that showed traces of albinoism or melanism.

With regard to the cross-breeding, he was ever keen to try to develop by these means the singing powers of his birds. In the case of pure-bred birds, he would bring up a young Linnet within hearing of a good singing Canary and, more remarkable still, of a Woodlark, and he certainly succeeded in getting marvellous song out of his pets.

I think I have said enough to show that I was brought up from my earliest days in a very atmosphere of bird-life.

My birdsnesting mania is not so easy to account for.

The first wild bird's nest I ever found was a Linnet's in an eyot on the Thames near Hampton Court Palace. I broke the eggs of course and suffered agonies. This was in 1857.

In 1860 my father built a house in Quarr Wood near Ryde Isle of Wight and then I had a chance of running wild and learning to climb. I remember well my first Song Thrush's nest and first Mistle Thrush's, both in the same tree in Quarr Wood. This was also my first tree. I was then just 8½ years of age.

It was now that an old family friend, seeing my mania for birds, presented me with a book on British Birds' Eggs with coloured figures, by Richard Laishley, published in 1858.

That settled the matter and I read and re-read that book until I knew it by heart. Nor have I yet discarded it. Whether it was found impossible to keep me in clothes owing to my tree-climbing or whether it was considered possible that I might develop into an egging maniac, my father lost no chance from this time onward verbally to discourage me from birdsnesting. But it was too late and as usual, I became more determined than ever to persevere in it.

But it was from my father that I drew both my love of birds and the elements of the science of nest-hunting. For when he was in want of young Linnets to place under a course of vocal instruction, it was he who took me out to the wild downs in the interior of the Isle of Wight and lying down, field-glass in hand, soon located the nests of the Linnet in the prickly gorse bushes by watching the movements of the old birds from afar. I quickly profited by such admirable teaching and it was not long before I could find Yellow-hammers and the rarer Cirl Buntings by employing the same tactics, without a field-glass.

A visit to Netley Abbey, in the spring of 1862, brought me in touch with what I looked upon as an immense bird, the homely Jack-daw. They were nesting in the holes in the crumbling walls and my father hoisted me up on his shoulders and I gathered many eggs and ended up by slipping and subsiding upon his high silk hat with disastrous results to hat and eggs. In those days gentlemen

invariably wore high stove-pipe hats when they went into the world of fashion, even to pic-nics!

It may readily be imagined that parental disapproval, combined as it was with such entrancing object-lessons of how to get nests, became a negligible quantity and from that time forward I have never missed a chance, in fine weather or foul, to study birds and their ways and I know well that there was no man on earth who took a greater pride and delight in my small successes in the ornithological world than did my good father.

There was one other of my father's old comrades who, although he died when I was far too young to profit at first hand from his knowledge of birds and natural history, happily left a record of it which did more to educate me in the elements of that delightful science than aught else.

This was none less than Charles St. John, whose fascinating book "The Wild Sports of the Highlands" was my first introduction to innumerable branches of sport and natural history. St. John gave an original copy of his book published in 1845 to my father who entrusted it to me. It was "borrowed" by an unscrupulous brother officer who never returned it. If the borrower is not dead (as he certainly ought to be) and should he read this, I now call upon him to return me that book.

It was St. John who inspired me in a hundred ways to note the habits of wild beasts, birds, fishes and reptiles, and it was due to my father's close friendship with him, combined with his own love and knowledge of birds and beasts that I was brought up to take an interest in all appertaining to natural history, an interest which has stood me in good stead and afforded me endless joys and happiness often amid the most adverse and depressing surroundings.

Another very delightful book, which must have inspired many youthful field naturalists besides me, is the Rev. A. E.

Knox's "Ornithological Rambles in Sussex," now, alas! sadly out of date. It gives most fascinating pictures of wild bird life in southern England in the "forties."

In 1874 I went with my regiment to Gibraltar and remained there until 1880. In southern Spain and the coast of Morocco opposite I found unlimited field for ornithological research, the limits being the difficulties of obtaining sufficient leave of absence and deficiency of the sinews of war to conduct expeditions, for travel both in Spain and in Morocco is a somewhat expensive matter.

It was at Gibraltar that I first made the acquaintance of my father's old friend, the late Lord Lilford, who came out in his yacht on an ornithological expedition to the marismas of the Guadalquivir. Here, too, in 1876 I also first met the late Lieutenant-Colonel L. H. Irby whose book on the "Ornithology of the Straits of Gibraltar" was published about the same time. From the day we first met, and for twenty-eight years subsequently until his death in 1905, Colonel Irby and I were constant companions in innumerable birding expeditions. In addition to his great knowledge of birds, he was an excellent botanist and an expert on butterflies, hence our trips together were unusually full of interest.

In 1894 he brought out a second edition of the "Ornithology of the Straits of Gibraltar" in which were incorporated the notes I had made during the preceding twenty years and a number of illustrations from my photographs and sketches.

It was in 1879 that the late Crown Prince Rudolf of Austria arrived at Gibraltar in his yacht, the *Miramar*, bent on an ornithological expedition to Spain. At the time I was a subaltern doing regimental duty and was not a little surprised to receive an invitation from the Governor, Lord Napier of Magdala, to meet at dinner His Imperial Highness, of whose ornithological

accomplishments I was at the time, I am ashamed to say, quite unaware. Our meeting resulted in the Prince requesting me to take him a ride into Spain the following day, the upshot of which was that when the *Miramar* sailed for Tangier I was bidden to accompany him. We subsequently went a cruise up the Guadalquivir when, thanks to the kindness of the late Henry Davies of Jerez and his comrades, we were permitted to explore that most fascinating region the Coto de Doñana. Here I made acquaintance with the since famous "wild" camels and gathered some eggs of the Flamingo. I was naturally much impressed with all I saw and learnt, not least with the wild camels.

Thanks however to my mentors and advisers, Lord Lilford and Colonel Irby, I refrained from "discovering" either camels or Flamingoes' eggs in Europe, since I learned from them the story of how these camels had been imported from the Canaries many years before, and how, their owners having departed, the Spaniard in charge of them had opened the stable door and bid them depart. As regards the Flamingoes, it is necessary for a man to be an enthusiastic oologist to find comfort and bliss as I do to this day in the fact that I have found a freshly laid egg of the Flamingo and further, *blown* it, in spite of the appalling mud-bath it entailed owing to my horse subsiding.

After these delightful experiences in the famous marismas of the Guadalquivir I accompanied the Crown Prince to Jerez de la Frontera, where we got nests of the Great Bustard, and on to Seville and was on the point of going with him to the Royal preserves in the Sierra de Grédos when the Prince received a pitiful telegram from the authorities at Gibraltar, which cut short my career of absolute bliss and ordered me back to the Rock to "persecute my vocation" as a subaltern on the Waterport Guard. It was truly a step from the sublime to the ridiculous.

This was in 1879. I left Gibraltar the following year, but since

that time have repeatedly returned there solely in quest of birds and of sport for periods varying from two weeks to six months and more.

But my experiences of birdsnesting and studying birds in their wild state are by no means restricted to Spain. During the course of my military career I have frequently found myself even when on home service, within striking distance of some favoured spot, such, for example, as Romney Marsh when quartered at Shorncliffe or Wolmer Forest when at Aldershot, where much could be done in the bird line at that time, whatever may now be the case. On foreign service, of course innumerable opportunities present themselves to the man who has sufficient knowledge of the birds and determination to seek them out. It would be hard to imagine a more detestable quarter for the keen ornithologist and sportsman than Malta. Yet even here I have found solace in seeking out and visiting the nests of the Great Shearwater and Stormy Petrel!

Since all British operations for many years past have taken place in wild regions, it follows that, when time permits, the keen birdsnester and ornithologist who may take part in them has many opportunities of adding to his knowledge under conditions favourable to collecting. In some instances our Expeditionary Forces have operated in districts where but little was known of the birds, as of much else, including the enemy! As it is extremely unlikely that any of the—to me—most objectionable species of the genus "military prig" found in our Army is ever likely to read this, or, if he did, would have the wit to recognize a portrait of himself, I may say that I have at times taken malicious satisfaction in the stupefied appearance of this type when, on my return from some reconnaissance, I have produced from the interior of my helmet a nest and eggs I may have chanced to come across. To them the mere sight of such a thing in my possession at such a moment was distinct proof of military incapacity. Yet, so long as a man does not permit his private tastes, such as a love of birds, to

hinder him in the execution of his duties, obviously nothing but benefit can come from the habit of mind which is adaptable enough to realize what is and what is not of supreme importance at the moment and escapes the narrow hide-bound military convention which prompts a man to view the Great Temple of Karnak as "an old ruin which would make a good station for Army Signalling."

Since this book deals almost entirely with my life among the birds of Spain, it naturally enough includes only my experiences in peace. Still, sometimes when I have found myself committed to an unusually awkward cliff, I have recalled Mr. Jorrocks' immortal description of fox-hunting and have thought how much more applicable it was to an expedition after wild birds in a wild country where long marches, transport difficulties and lack of supplies, let alone troubles connected with fuel, water, cooking and quartering, alike combine to present a by no means imperfect image of war. As to the precise percentage of danger incurred in fox-hunting, war, or cliff-climbing, I must leave it to the individual opinion of every reader who may have experience of them.

I will only cite two examples of birdsnesting on active service which may possibly amuse and at any rate will not shock my readers. In January 1885 the chances of war placed me for a brief period in acting command of one of Gordon's famous "Penny Steamers" on the reach of the Nile below the Sixth Cataract. During the fighting at Abu Klea and subsequently all the naval officers had been killed and wounded save Lord Charles Beresford, and he was suffering from a most painful malady which required surgical aid and laid him on his back for seven days. During this time, our two small steamers were employed in reconnoitring up and down the Nile and in collecting supplies and fuel. Having landed one day with a party of Bluejackets and Gordon's Irregulars to round up some cattle, upon pushing through the groves of pomegranate and lemon near the river, we came to an open space,

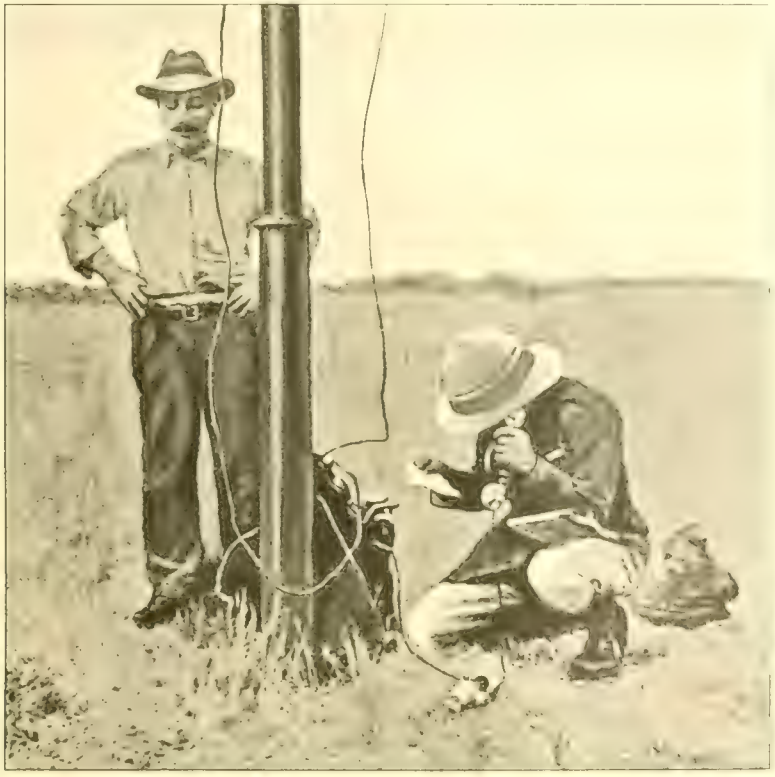
beyond which was a straggling village which was held by the Arabs whence they opened a sharp fire with their Remingtons. As we were out only for a day's cattle raid and the enemy were in force, I gave the word to fall back through the grove to our vessel. It was whilst thus engaged that I suddenly spied a lemon tree with its branches festooned with the beautifully-woven nests of the small Black-and-red Weaver-bird! I had never seen one of them before *in situ*. Unfortunately, they were eight or nine feet up, and at the extreme end of the pendent boughs. Calling a Bluejacket near me I besought him to give me a leg up. He replied by seizing me by the legs and hoisting me with a jerk. I had just time to grab one nest and stuff it into my bosom when he let me drop and we raced back together to the friendly plank which led aboard our "war-ship." As we shoved off, the Arabs lined the scrub on the steep bank and their bullets pattered against the old boiler plates which formed our armoured topsides.

Events moved rapidly in those days and there was much to do and think about and it was not until four days later, in our bivouac at Metemmeh, that, feeling my shirt very scrubby, I put my hand in and drew out the Weaver-bird's nest squeezed as flat as a pancake! It however, recovered its shape and is among my treasures to this day, a memento of the furthermost point south on the way to Khartoum, where I was able to land, as well as my one and only experience of the nesting habits of the Black-and-red Weaver-bird.

The second example was in November 1899 during the early days of the Boer War. I was with the Frontier Force at Orange River Bridge and organized a train to support a reconnaissance towards the heights of Belmont then strongly held by the Boers. On reaching the high ground near Witteputs, I halted and pushed out patrols to get in touch with those to our front. We had brought with us a telephone from the station and the R. E. officer with me,

Colonel Kincaid, set about attaching it to the ordinary telegraph wires running along the posts near the railway.

Looking round for a convenient post I espied a big nest built on top of one hard by. As far as I recall, there were only three



A NESTING PLACE OF THE SOUTH AFRICAN CROW.

insulators and wires, yet the bird, the South African Crow (*Corvus capensis*) had managed to construct a compact nest composed of various short lengths of telegraph wire and clippings from barbed wire fences—both trees and sticks were scarce in that region. A

Sapper shinned up and pulled out the big nest which was lined with veldt grasses and wool and contained freshly-laid eggs. The interesting point to me was that I instantly recognized them as similar to some unidentified eggs brought to me when a small lad in the Isle of Wight from the Cape over thirty-five years before. They were true Crows' eggs in shape and markings but, in place of being green, were red-brown.

We soon joined on a wire and got into communication with Orange River and I found myself speaking to an Inspecting General who had arrived in my absence at Orange River in a real armoured train (mine was merely an "unarmoured cruiser") and expressed his intention of coming on to see what we were about. Somebody took the inevitable photograph of me when struggling with the telephone. Months afterwards, I purchased in Paris a reproduction of the photograph thus taken, duly inscribed "Le colonel Kekevitch se servant du téléphone de campagne en avant de Kimberley"! To me it recalled the whole situation, the telegraph post, the despoiled Crow's nest and the impassive Sapper taking mental notes of my telephone language.

When, owing to the very serious injuries I received during the war in South Africa, I was compelled to leave the Army, my thoughts at once turned to Spain, where the climate would suit me in the winter months and where I could continue and extend my researches in the wilder regions.

Since 1901 I have spent half my time in Spain and before the troubles became acute made an expedition to Morocco also.

Hence the birdsnesting adventures in this book deal almost entirely with Spain. Owing to my intimate knowledge of many remote spots in this beautiful country, explored during many expeditions made before the war in South Africa, I am able, in spite of the serious handicap due to my injuries, with the aid of horses or mules to re-visit these parts. Once on the spot, I can

still render a fair account of most cliffs or do a day's wading in a marsh, sufficient in any case to reach a nest I may want to photograph.

The results of some of these expeditions will be found in this book.

Those who know the works of Lord Lilford and Colonel Irby and their unrivalled knowledge of the birds of the Spanish Peninsula will easily realize how much this book owes to them.

More especially several of the plates are from original drawings made for Lord Lilford and subject to his unerring scrutiny and approval.

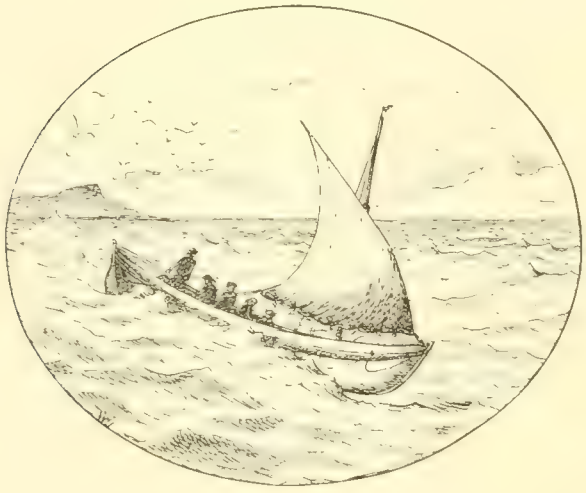
But besides Lord Lilford and Colonel Irby there have been others who have studied the birds of Spain. Among these was the late Mr. Howard Saunders who in 1869-1871 wrote a series of papers to the *Ibis*—Lord Lilford's first papers appeared in the *Ibis* in 1865-66. Still later is the book entitled "Wild Spain" published in 1893 which deals in a popular and attractive manner not only with the birds and general natural history but also with a diversity of other matters such as Spanish agriculture, wine-growing, bull-fighting and gipsies. All who are interested in Spain should read this book. I have often regretted that it did not appear twenty years earlier when I first went there.

In the following pages no attempt has been made to place the various birds described in their proper scientific sequence, for reasons which will be sufficiently obvious to the reader.

The arrangement adopted is based roughly on the usual habitat of the birds; thus the first group deals with those most commonly met with in the low-lying marshes of Spain and the second with those which frequent the grass plains and open undulating country adjacent thereto. The third comprises the woodland birds which nest in trees in the hills around and the fourth those which usually resort to the sea-cliffs. The Raven, although both a tree-nester

and rock-nester has been included in this group, since the pictures given are of nests in cliffs and since Ravens are especially fond of sea-cliffs.

The fifth and last group comprises those birds which resort to the inland cliffs which are found in such extraordinary profusion amid the rugged sierras of Spain.



CHAPTER II.

TRAVEL AND EQUIPMENT.

Time, in bird-watching, a great factor for success—Travel in wild Spain—Camping out *versus* country quarters—The minimum equipment necessary for comfort—Saddles, pack-saddles and saddle-bags—Importance of a complete equipment—What a birdsnester should carry—Use of aneroid, field-glasses, telescope and compass—What his assistants should carry—Bird traps and trapping—How to trap birds without injury—The joys of wandering in a wild country.

IN order properly to study the ways and habits of wild birds the main factor of success is time. Without ample and adequate time the field-naturalist will inevitably miss opportunities which may never occur again in a lifetime.

Few men however can spare the time required for thorough research, so one can only make the best use possible of the time one has. I can recall various expeditions after birds and nests during the last thirty-five years, where, had it not been for lack of time, I could have achieved successes which were almost within my grasp but which had to be abandoned, in some instances for ever.

At no period was this more clearly brought home to me than during my six years at Gibraltar, between 1874 and 1880. That was in the days when no railways or other facilities for travel existed in the vicinity (for even the road from Algeciras to Tarifa was not then constructed) hence every expedition from the Rock was limited to riding out between the hours of morning and evening gunfire, when the gates of the fortress were opened and closed. And closed they indeed were and the keys were taken to the Convent, the Governor's residence, and kept there.

Every expedition thus depended on the powers of one's horse to carry one far enough a-field at sufficient speed to leave reasonable time for sport or ornithology.

One result was that one became a past master in the art of packing one's kit on horseback, for guns, food, ammunition, ropes for climbing, and all other paraphernalia of the naturalist had to be thus carried.

From time to time it was possible to get a few days' leave, generally five to ten days, and then pack-animals were called into requisition to carry our supplies and equipment. Everybody has heard about the discomfort of travel in Spain, should the traveller leave the routes usually followed. There are however degrees of discomfort in this as in other things. These can be modified to some extent by experience in rough travel and by a little forethought, but it is ever a difficult matter to decide upon what may and what may not be wanted for a particular trip. So long as one intends to stop in small towns or villages, so long will this be the case, and every journey must be organized in view of the locality to be visited.

My own experience was that, unless a promising expedition was to run the risk of being wrecked for want of the bare comforts of life, the only sure way to achieve success was to look upon a birdsnesting expedition in a wild country much as a campaign and to prepare accordingly for every possible eventuality.

This brings me to the subject of camping out, an occupation which has such fascination for those who are unaware of the trouble it means. Save in a few, very few, localities, such as certain Sierras and in some of the more remote parts of the marismas, tents are quite unnecessary in Spain, for it is almost always possible to get the shelter of a roof and all old campaigners know what that means. Tents are unsuited for most travel in Spain, they are heavy and increase one's transport and are troublesome to pitch. In wet weather (and when it rains in Spain it means business) they are miserable and in hot weather, uninhabitable. I speak of course of the type of tent which would be carried by a man engaged in the class of work described in this book. On the African side of the Straits, on the other hand, they are absolutely necessary, since Moorish villages or encampments are unsuited for Europeans. But to travel with comfort in Morocco means taking a regular camp equipment with plenty of tentage both for one's self and for one's servants and provided this be done, I know of no more delightful way of seeing a wild country, so long as the weather is passable. I start then with the assumption that the wandering birdsnester so regulates his movements as to be within reach of some farmhouse or small dwelling where he can induce the owner to give him a room or part of one.

In this, I have never yet failed, but simply because I let the good people clearly understand that I want nothing from them, save and except a shelter. They are extremely sensitive as to the smallness of their resources and the imagined unsuitability of their belongings for English use. But when once they realize that nothing unusual is expected from them, they become most anxious to show all the hospitality possible and overburden one with offers of all they possess. I have often watched their surprise, as they by degrees became aware that the Englishman spoke the

truth when he said he "wanted nothing." To want nothing sounds a great deal but in practice it is not so.

The secret of success lies in having the indispensable articles ever with one, not because they are sure to be wanted, but because, in the event of their absence, untold misery and discomfort ensue. For this reason, I always carry with me in addition to a shift of clothes and a pair of canvas shoes, the following :—

(1) Light camp bed and blankets.

(2) Portable cooking canteen.

(3) Small luncheon basket with aluminium plates, forks, and spoons.

(4) Supplies for three or four days.

I thus am ever certain of a dry suit of clothes and a bed to sleep on and can likewise be sure of being able to cook my soup or make cocoa or porridge without upsetting the family arrangements.

In Spain, no matter how humble the dwelling or how remote from civilized parts, one can always reckon on fuel for cooking and good drinking water, also excellent bread and frequently eggs and oranges.

In the accompanying picture my old *arriero* Eduardo Villalva, a friend of twenty-eight years, now alas! gone on ahead, is shown with the whole of my kit packed for the line of march. In addition to the already-named essentials, this horse carried ropes, sling, egg-boxes, butterfly-net and a week's supplies. A reference to the pages in which I describe the equipment I carry when engaged in birdsnesting will account for the seemingly bulky appearance of the load. Of course, there is no necessity to reduce one's kit to the legal minimum and, truth to tell, every year one adds to one's comforts. Thus it is undeniable that a canvas bath, a light folding table, and a portable chair are pleasant additions and render one independent of makeshift arrangements.

When riding a horse, it is of course most desirable to have your English saddle with you. I have an old "Service" one with wallets and saddle-bags which, could it but speak, could tell both of our fighting in the Desert and veldt and is the comfort of my life. When riding mules or donkeys, the native pack-saddle is

PACK HORSE WITH TRAVELLING KIT.

by far the best and one's saddle-bags can be thrown across these. A good supply of Spanish *alforjas*, or canvas saddle-bags are always most useful and can be variously allotted for the day's food, ropes &c. as may be required. The great point is to keep the

various parts of one's kit separate and easily accessible. Among such are a good waterproof coat—no flimsy shooting cape will turn Spanish rain—and a warm guernsey to pull on over all when required.

It will be remarked that no reference is made to one's servants and cook. The reason is simple. On work such as I deal with in this book, there is no room for such people and the man who cannot look after himself had better adopt some other diversion. When pack-animals are employed, the *arriero* or mule-driver of course looks after them and feeds them.

I have had some amusing experiences in the hospitable ways of the good people of the Sierras. Thus, some years ago, when travelling with an Artillery officer we reached a house of a *guarda* or keeper, who was most anxious we should stop at his place for the night. In accordance with custom, we had all necessary equipment. After I had cooked our dinner I asked our host to show us the room for our camp beds. He at once replied "Here" and brought them in. Protest was useless so we unpacked, undressed and turned in. Presently he followed suit and scrambled into a big double bed at the far end of the room, our hostess meanwhile having disappeared. She now returned and to our surprise likewise commenced to undress. The situation was novel. At the exact psychological moment she blew out the light! Next morning, both *guarda* and wife were up and dressed before we woke. This tale of my methods of travel in wilder Spain has reached the snows of the Himalayas and thence has come back to me.

I am writing this chapter in a small room in a cottage in wild Spain. It is mid-winter and a very wet day. The wind is howling and the rain restricts the view to a few hundred yards. But the roof is sound and the whitewashed walls and stone floor are dry and I am sitting in my own arm-chair at my own table and mentally

thankful that I am not —as so many of my friends kindly suggest— under canvas.

In no sport or pastime, art or science, call it what you will, is it more necessary to have exactly the right gear at hand and at the right moment than in birdsnesting, more especially when climbing is required.

To ensure a successful day's work, or, at any rate, one which may not be marred by the absence of some absolutely essential article, it is necessary to keep a list of what is required. Everybody will have his own ideas as to what to take but the following are my own, of which I keep a copy in my notebook and also one writ large in charcoal on the walls of my dwelling.

Worn or carried on person :—

(1) Aneroid, watch, silk rope and whistle.
(2) Hunting belt, swivels and knives.
(3) Notebook and pencil.
(4) Field-glasses, telescope and compass.
(5) Sketchbook and small hand camera.

Carried by assistants or on pack animals :—

(1) Ropes, canvas sling, casting-line and weight.
(2) Egg-boxes, cotton wool and egg-blowing implements.
(3) Traps (when required).
(4) Rope-soled boots, guernsey and waterproof.
(5) Photographic apparatus.
(6) Fishing-creel, with food, water-bottle and drinking cups.

I am quite aware that the list is a formidable one, but long years at the work have taught me how absolutely necessary most of the articles are and, further, how greatly the presence of others add to the interest of a day's work, more especially in a wild and unmapped country.

I shall now deal with each article separately in order that every reader may judge for himself whether he can dispense with it or not, citing examples how and when I have found it useful.

(1) *Aneroid, Watch, Silk Rope and Whistle.*

The most convenient sized aneroid for ordinary work is one with a $1\frac{3}{4}$ in. dial (watch size). For general use one which shows altitudes on the external ring over a range of 5,000 feet is most suitable since it permits of clear graduation by which differences in level can be read to within ten feet with little trouble. Of course for work in higher mountains an aneroid must be graduated to show heights up to 10,000 feet at least, but thereby the difficulty of reading off the dial is greatly increased and its value for determining accurately relative heights proportionately diminished.

Save when I devote a day to marsh work, I invariably carry an aneroid and, apart from the general interest of observing and noting the heights of mountains, cliffs, and nesting-places, on occasions it is of the greatest assistance in finding one's way on a precipitous mountain to some particular point. I will give an example. Some twelve years ago I visited a great range of terraced cliffs and noted a Vulture's nest at a certain point. But on setting to work to climb the cliff I soon lost my bearings amid the numerous gullies, projecting crags and ledges which at every turn hindered my advance or led me whither I did not wish to go. As frequently occurs in big climbs, I was soon completely at fault and had no idea whether I should try to go higher or lower along the face of the cliff and eventually had to abandon the attempt.

On the occasion of my next visit I reconnoitred the cliff more carefully and took the precaution of noting down a few points on the same level as the nest before setting to work to climb. On reaching one of these landmarks, a crag with some olive trees on it, I consulted my aneroid and found I had risen about 300 ft. I then strove to keep to the same level, but this soon proved to be impossible for I had to ascend in some places over 100 ft. and at others work downwards along steeply sloping strata, amid a

jungle of palmetto and lentiscus. But the aneroid always told me when I was on the general level of the nest and eventually I got on a terrace which led, most unexpectedly, right into it. At the time I had no good picture of a Griffon's nest. It was a splendid subject, a fine nest on a sloping shelf with steep rock rising behind and on one side. There were heavy clouds and some rain and a long time-exposure was wanted. With the aid of my silk rope I secured myself to the rock and backed out cautiously till I got sufficient distance, then pressing the camera with one hand against the cliff, I took the photograph. The camera was one with a fixed focus. Despite the difficulties I, or rather the camera, got an excellent picture, so excellent indeed that I had it enlarged to 10 in. by 12 in. and have it now hanging in my study. So much for "the uselessness of hand cameras." In this case the aneroid was the prime means of my reaching the nest but without my silk rope the photograph could never have been taken, since to get it meant standing on the slippery rock at the extreme edge of a sheer cliff.

In time-exposures of this nature it often becomes a serious difficulty where to dispose one's watch so as to keep an eye on the second hand. My common habit has been to hang it on some branch or lay it on a ledge, both clumsy expedients. It is only this year that I have become the possessor of a wrist watch fitted with a third hand to indicate seconds on the dial. What anxious moments would not this simple contrivance have saved me in innumerable climbs in the past!

The importance of a good whistle when engaged on cliff work will be described later on and every sportsman knows how useful a whistle can be in many other circumstances.

(2) *Hunting Belt, Swivels and Knives.*

I am a great believer in a sheath-knife which is available for instant use in emergencies. It is for this reason we always carry

one in our war balloons. But I am no believer in the popular "sportsman's" clasp-knives containing every possible and impossible weapon, apparently designed to remove sections of skin and to excavate holes in one's hands if one attempts to do a tough bit of cutting. If a man wants to carry a corkscrew, small blade, cartridge-extractor or other tools, by all means let him have them in a small metal knife of the type popularly known as the "drunkard's companion"; I regret I do not know its official description. This, he can carry on a swivel on his belt as well as a small sheath-knife. The latter is invaluable for all nesting purposes, whether to clear away scrub on cliff, branches in a tree or to cut a lane through high reeds in a marsh.

The springs of all swivels should be double-rivetted, else the day comes when they slip and one's knife is lost. I always have several swivels on my belt, to facilitate carrying a camera, egg-box or such bulky objects, which, when slung over the shoulder are apt to get in the way. By clipping them on to the belt with a double swivel this is entirely obviated.

(3) *Notebook and Pencil.*

No naturalist, traveller or explorer can do without a notebook. One which will slip easily into one's pistol (or hip) pocket is a good size, say about 6 in. by 3 in. Pages should be prepared on which to keep a record of photographs taken, showing subject, aperture, speed &c.

(4) *Field-glasses, Telescope and Compass.*

For bird-watching, especially birds on the wing which it is required to trace to their nests, a good pair of ordinary binoculars is essential. For all-round work they are infinitely superior to any of the prism glasses since they can be used at all hours of the day and in all lights. They must have a fair-sized field, so as to make

it easy readily to pick up birds on the wing and *keep on them*. I personally use aluminium glasses of about five diameters and with 2-inch object-glasses, which weigh in their case 1 lb. 7 oz.

But these alone are not sufficient for the birdsnester. When a bird has been sighted and watched to its nest or elsewhere, the glasses are put aside and a telescope brought into use. Of course the best sort, where bulk is of no account, is a good stalking-glass, but I have for over twenty years done all my work with a naval "watch officers" telescope. This is extremely powerful and, having only one pull-out, is rapidly focussed, a great point. The popular objection to it that it is too long to carry is all nonsense; my own in its leather sling case is only 18½ inches in length and weighs under 1 lb. 12 oz.

In carrying field-glasses for bird-watching, the great thing is to have them ever ready focussed so that they can be brought into use with the least possible delay. This can be provided for by the very simple expedient of having the leather case made long enough to hold them when focussed ready for use. Another most useful small addition is to have a U-shaped spring or clip fixed into the bottom of the case, into which the glasses are pressed when returned to it. In climbing or riding, should the case have been left unstrapped, the risk of the glasses falling out is by this means minimized.

It is an excellent plan to have a stud sewn on to the case as well as a buckle, since either of these by itself is liable at times and under rough usage to fail.

When birdsnesting in wild countries I always carry a compass, (of course, if any wag likes to say this is because I am the inventor of the Service Compass, he may) which I use both for general purposes of travel and to fix points of importance, such as cliffs, mountain tops, the trend of valleys, &c. Owing to the small scale of the maps usually procurable, it is the only means at times of locating one's position.

A compass also is most useful when engaged in any geological or archæological researches but I will not inflict on my readers a disquisition on these matters. Suffice it to say that many a day's birdsnesting, blank as regards nests found or birds seen, has brought me to places of absorbing interest where without aneroid, compass and (shall I venture to avow it?), a clinometer or level, I should have been unable to take advantage of sundry delightful opportunities for study and research brought unexpectedly within my reach.

(5) *Sketchbook and Small Hand Camera.*

These will be found described at length in the next chapter. Over and over again I have endeavoured to reduce the number of articles I carry (and consequently the total weight) by relegating one or both of these to the "second line" of my field equipment. But as often as I have done so I have sooner or later had ample cause for regret and have reverted to my original plan of never being parted from them. I can recall lost opportunities of a sketch of some glorious view or of a photograph of which the like will hardly occur again, both ascribable to the desire to reduce one's load.

So much for the lighter articles, now as to the more bulky, which are usually carried on pack-animals or by men. On arriving at any locality where any climbing or exploring has to be done, a redistribution of the gear is made and articles suitable for the task immediately before one are selected and divided out among the party to carry. Among these are usually the egg-boxes, the necessary ropes, rope-soled boots and the second camera and spare films.

(1) *Ropes, Canvas-sling, Casting-line and Weight.*

These are fully dealt with in the chapters on Tree and Cliff-climbing.

(2) *Egg-boxes and Egg-blowing Apparatus.*

To carry eggs I use sets of boxes of tin or aluminium which "nest." The only egg-blowing appliances wanted in the field are a good egg-drill and a blowpipe, the rest of the paraphernalia, pliers, scissors, syringe &c., can be left at home. It is always best, especially with large eggs, to get rid as much as possible of their contents directly they are taken. Eggs thus treated, if properly packed, will rarely be broken no matter how rough may be the journey, whereas unblown eggs have a genius for coming to grief.

(3) *Traps.*

Most birds can be trapped on their nests without difficulty. I have never failed when I have given time to it save only with the Raven, which seems critically to note every detail and to see at a glance where a trap has been concealed.

For big birds of prey the surest trap is an iron rabbit-gin with the teeth filed down. In addition I invariably bind several thicknesses of folded chamois leather round the jaws and thus I have never injured a bird I have caught. It is most necessary to watch birds both on and off their nests, and note carefully on which side they enter. The trap should be placed at this last point and lightly covered with leaves, twigs &c. I invariaby attach the trap to a strong line which I lead down to the ground and secure to a loose branch.

Upon the bird stepping on to the nest and the trap being sprung, it endeavours to fly off but is soon brought up by the bough at the end of the line and after a few ineffectual flaps, loses its balance and falls to the ground. By this means I have at various times trapped Vultures, Eagles, Neophrons, Harriers and Kites and could have easily trapped Eagle Owls and many other species. *In no single instance* have I in any way injured a bird by this method of trapping. As a rule I have released them sooner or later.

I describe the process because if it be required to obtain a bird either alive or dead, it is by far the most merciful method to adopt. Shooting big raptorial birds off the nest, besides frequently damaging their plumage, is by no means a certainty and I can recall several instances where an Eagle after receiving several charges of shot, has gone away to die—a splendid life wasted—and I have read of many like mishaps. In this class of trapping the bird is not left to struggle for an indefinite period, for the skilful trapper, having set his gin, retires to the shelter of some bush or rocks 300 yards or more from the nest, whence he watches until the bird returns and is trapped, often a matter of less than half an hour. A coat or rug thrown over the bird much simplifies the task of securing it.

(4) *Rope-soled Boots, Guernsey and Waterproof.*

The value of the Spanish rope-soled boots or shoes known as *alpargatas*, for cliff and tree climbing can hardly be exaggerated. Stockinged feet are well enough but if the rocks be sharp, they soon become bare feet and what between cuts, bruises, scratches and the presence of thorns of all sorts, it does not take long to get one's feet into a very unserviceable condition, and tender or sore feet are an element of danger when cliff-climbing.

Hence the *alpargatas*. But the ordinary nailed shooting-boots should only be taken off and the *alpargatas* donned when the actual cliff work has to be tackled. For rope-soled boots on muddy hillsides, when once they become clogged, are an abomination and, what is worse, are extremely dangerous when the rock-climbing begins.

In all mountain work the climbers are apt to get over-heated and often after a stiff climb it may be necessary to lay up for an hour or more and watch the wild birds. Then a warm guernsey, loose enough to haul on over all is invaluable. The alternations between heat and cold, in sunshine or in shade, out of or in the

wind, amid mountains is a thing only learnt by bitter—very bitter—experience.

After all, the whole science of life and of living is how to adapt oneself to one's environment and one among the many charms of the wild life I have led at intervals for so many years is the knowledge one by degrees accumulates as to what is and what is not

QUARTERS DURING A BIRDSNESTING EXPEDITION.

essential to one's existence. This is no place to expatiate on such matters, for every man has his own ideas of what is and is not essential. But there are some things to do without which spells misery, namely, those which concern rest, such as camp-beds, blankets (and mosquito curtains in some countries) and those in connection with food. The accompanying picture shows a corner of my temporary quarters when on a birdsnesting expedition in a wild country.

To me one of the delights of wandering about a wild country in quest of birds is the endless series of other attractions which from time to time draw one's attention from the main work in hand. For it not seldom happens that what may, to me, be merely a side-issue is the absorbing life-study of one of my companions, such for example as butterflies or botany. Thus it comes about that on some days I find myself wielding a butterfly-net and equipped with boxes and killing-bottles on the look out for specimens for my friends whilst never a day passes that one does not come across some rare flower or plant—a never-ending joy. Sometimes on such occasions I call to mind the words with which I commenced this book and whether it be after a successful foray among the birds, or some new experience amid butterflies, beetles or reptiles, or some fresh interest in botany, geology or aught else, I congratulate myself that, despite the cruel Fortune of War which so abruptly closed to me the profession of arms, I was spared at any rate to be "reduced to birdsnesting."

CHAPTER III.

SKETCHING AND PHOTOGRAPHY.

Superiority of sketches over photographs for general views—Value of day-light loading hand-cameras to the climber—Difficulties of carrying heavy cameras, plates or weighty appliances—Description of hand-cameras employed, their weights &c. Advantages of working with two cameras—Lightness and portability the sole deciding factors—Difficulties of using a stand when climbing—Improvising camera stands—Pen and ink sketches.

CERTAINLY one of the greatest joys in life to the successful birds-nester is to obtain a record of the places he has visited and the haunts of the wild birds he has watched. For nearly twenty years I never went on an expedition without making sketches of the localities visited and when possible, of the situations of the nests. My especial joy was to reach some Eagle's nest and endeavour to delineate with pencil and brush "what the Eagle saw." Of course, I had to submit to the usual chaff to which every man and boy from "Martin" down has experienced in such cases. It was suggested that my cliffs were too steep or that no man could get at such spots. Whether this was the case or not

I cannot say, I merely attempted to draw what I saw. With the advent of photography, absurdly enough, all this was changed and the average critic who had ridiculed a sketch was willing enough to accept a photograph as absolutely correct. It is needless to explain that distances and depths can be and are frequently grossly exaggerated in photographs, whilst mountains and cliffs are equally absurdly dwarfed. For this reason, as will be noted, I have given very few general views in this book, simply because the cameras I work with are not suited for such purposes. The exception is where in a photograph of a nest at close range some of the country immediately below comes in; here the impression produced is at times singularly realistic.

For water-colour sketching nothing can equal for compactness and convenience Roberson's "Combination" sketchbook and paint-box. The latter carries the eight necessary moist colours and brush and the book measures over all $4\frac{1}{4}$ in. by $8\frac{1}{2}$ in.

I have never been without one (or its equivalent) for over thirty-three years and before the present pattern appeared I designed a make-shift one of my own. The opportunities for sketching on such expeditions as mine are simply boundless and in fact are only limited by the time available. Although, upon the introduction of the daylight-loading hand-camera, I instantly adopted it as an adjunct to my favourite pursuit, I still look back with satisfaction on the hundreds of water-colour sketches I made in all sorts of wild regions and remote spots of the glorious views which lay before me. Inadequate and crude as are many of these sketches, they give an idea no camera work can pretend to of the heights and distances, atmosphere and colour amid which my beloved birds live.

But the camera is of course unsurpassed for the faithful delineation of all details. In my own particular line, although photographs may and do fail lamentably to show the majesty of

a great cliff or the glorious scenery viewed from it, they are the only possible means of recording the structure of a nest or the conformation of the rocks adjacent to it. The ideal book on birds-nesting would be one in which the places and scenery were

A CLIMB FOR A PHOTOGRAPH.

reproduced from water-colour sketches, and the actual nests and eggs, rocks, trees and reed-beds were shown in photograph.

It is no intention of mine to venture into a discussion as to what is the best camera for use in connection with birdsnesting. I shall merely describe the very simple appliances I have used for illustrating this book. I am no photographer, for the simple

reason that I have been far too busy all my life to find time to devote to that absorbing subject. Would it were otherwise!

For work on moor or marsh there is no limit to the size and weight of the camera and obviously in such cases all the modern luxuries of reflex cameras, focal-plane shutters, tele-photo lenses,

PHOTOGRAPHING A NEST.

rigid stands &c. can be brought to bear. Such weighty and cumbrous contrivances are however entirely unsuited to mountaineering, cliff or big tree climbing.

Those whose experiences are limited to home birdsnesting or to a few casual trips abroad have frequently urged me to adopt

more perfect tools but to all such I retort that they have no idea what systematic birdsnesting and climbing in a wild country means. On several occasions I have taken expert photographers with me armed with the most expensive and elaborate cameras and in every case they have failed to obtain results in any degree commensurate with the extra trouble involved, for they could not bring their cumbrous outfit to the required spot. I would go further and say that in the class of work dealt with in this book, save in the case of Bustards, Cranes and marsh-nesting species, over 90 per cent. of the pictures I have taken during the last fifteen years could never have been obtained at all save by employing the very lightest and most portable forms of small hand-cameras. When, therefore I read in a professional bird photographer's book how after ten years experience he can only recall one instance where a hand-camera would have been useful, I merely bow to his superior knowledge and pursue my own way unmoved. For in very truth in my line of work it is not a question between the orthodox camera and a hand-camera, but between hand-camera work and no work at all.

There is of course no finality in the marvellous advances in science and every year will see better lenses and more perfect appliances placed at the use of the field naturalist. But there are distinct limits which are not set by the degree of perfection of the camera employed but by the knowledge, energy, persistence, skill and, above all, the nerve of the individual who employs it. Hence, when I am told, as I often am, that no good work can be done with a hand-camera—whilst not claiming that my work is good—I console myself with the fact that very few of those who lecture me could ever have reached the places I have pictured, burdened with the more cumbersome gear they recommend.

Now as to the cameras I employ. For six years I was content to use a simple box-camera measuring $4\frac{1}{2}$ in. by 5 in. by 6 in. and

weighing 1 lb. 7 oz. or in its solid leather case, 2 lb. 12 oz., known at first as the Blair "Bulls'-eye" and later as the Kodak "Bull's-

NEST OF GRIFFON VULTURE ON OPEN LEDGE.
A quick exposure.

eye" taking cartridge films of 12 exposures giving pictures of $3\frac{1}{2}$ in. by $3\frac{1}{2}$ in. With this I took the photographs which illustrate Colonel Irby's "Ornithology of the Straits of Gibraltar." Owing to

hard knocks, falls &c., I expended three or four of these during that period. But besides being a very cheap article, about 30s., it was ill-suited to the work in hand, since its fixed focus of 9 ft. nominally, but 7 ft. in practice, made it unsuitable for using at very short distances when photographing nests, especially if in trees or on cliffs.

My next advance was to a Kodak folding pocket-camera, No. 3, taking film cartridges and giving quarter-plate pictures $3\frac{1}{4}$ in. by $4\frac{1}{4}$ in. This focused from infinity down to 6 ft., a slight improvement but not enough.

I then procured another similar Kodak and, by removing the back and focusing on a piece of ground glass, I found by experiment that it could be used at 5, 4, and 3 ft. distance. Then by having two small magnifiers made, one for 2 ft. and one for 1 ft. 6 in. to fit over the lens, I was able to work down to these close ranges.

The magnifiers I carried in the flap of the camera-case, fitted to small sockets by bayonet-grips whence they could be easily extracted when required. On several occasions owing to the difficult situations in which I was placed I have only had one hand to work with, and it became necessary to hold the camera by the strap in my teeth whilst I fitted a magnifier. I commend the consideration of this necessary but awkward evolution to those who are perturbed because I decline to carry complicated cameras. It was with this camera that I obtained the majority of the pictures which appear in this book. It weighs 1 lb. 9 oz. and in its solid leather case with magnifiers 2 lb. 7 oz.

The camera I now employ is a Kodak No. 3 fitted with a Goerz lens and a maximum aperture of *f* 6·8 with a shutter with speeds from 1 second to $\frac{1}{100}$ second (nominally) and which focuses down to 2 ft. 6 in. Of course it is useless for birds on the wing but I am content to forego this rather than carry a more delicate camera which might fail me at the supreme moment, after an

adventurous climb. This camera weighs 1 lb. 14 oz. or in its case 2 lb. 12 oz.

For six years I used the "Bull's-eye" only, then for six years I carried both it and Kodak No. 3 with magnifiers, using the first for "snap-shots" and the second for more careful work. I now carry the Kodak No. 3 and the improved pattern Kodak with Goerz lens. The object in carrying two cameras is of course primarily to ensure that if one fails, there is another to fall back upon. But

A VULTURE'S NEST IN DEEP SHADOW.

I also like having one so that, when opportunity arises, some idea of the size of a nest and its position and surroundings may be obtained by one of my friends photographing me at a nest.

As will be seen, this has very seldom been possible; whereas, in instances when it has been, there has been rarely anybody available to work the second camera. This is unfortunate, since it would have greatly added to the interest of some of the pictures, had it been possible to introduce a figure or two. Unfortunately also

most of the nests depicted were in places of which it was impossible to get a general view, since they were out of sight of everybody save the man on the spot.

For photographing nests on the ground or in marshes a camera stand is often useful. Here again I carry the very lightest possible pattern and look to its rigidity of construction to minimize the vibration caused at times by the wind. Very seldom is a stand of any use in cliff work. In such places one has to be extemporized out of some ledge or shelf of rock and the camera placed upon it and, if necessary, wedged up in the required positions by small fragments of rock. Where no horizontal ledge can be utililized the camera must be held rigidly with one side pressed firmly against some vertical crag. A large proportion of the photographs given are the result of long time-exposures in deep shadow on cliffs and often in gloomy caverns and in no case was I ever able to use a stand, but had to extemporize one as described.

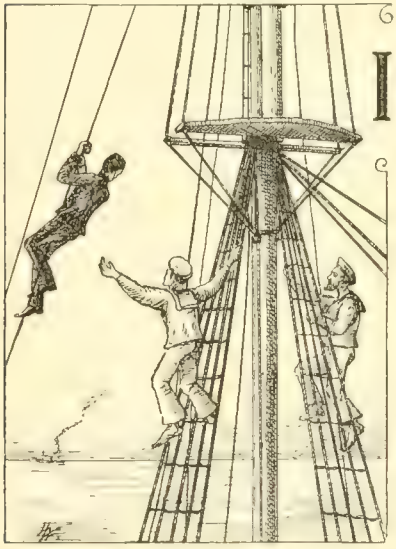
In reproducing the photographs for this book, in four cases only has it been thought desirable to retouch a negative. The remainder are as in their original state.

The pen and ink sketches are, with some few exceptions, fac-simile copies of the water-colour drawings made by me on the spot during the last thirty-three years.

CHAPTER IV.

ON CLIMBING IN GENERAL.

First bird studies at Gibraltar—Climbing the Rock—The bogey of vertigo—Its cure—To the masthead in H.M.S. *Simoom*—Escape from Bluejackets—Climb round "the back of the Rock"—A very awkward question: "Chucking out ballast"—Exploration of St. Michael's Cave, "Clincher Hole"—Descent into Europa Ravine Caverns—Subsequent Cave explorers and climbers and their fate—The "Unclimbable" fence.



I HAVE already briefly described how when I first found myself at Gibraltar in 1874 I devoted most of my time to the study of the birds of the country. During the first winter I was on the Rock I set to work to collect all the species new to me, which I skinned and preserved. Also I occupied the tedious hours when "on guard" (a recurring event at that date of every fifth or sixth day), in making water-colour drawings of birds from specimens obtained, endeavouring always to depict them in the attitudes in which I had watched them when alive. Of course with the return of spring I was ever on the look-out for nests and climbing in quest of them. And this went on during successive winters and springs on the Rock. But I did not restrict my climbing to the nesting season

alone. There is little enough to be done at Gibraltar during the summer months, and when nests failed I used to devote my energies to scrambling about the cliffs, with an eye to marking down some possible nesting-place for the succeeding year. Of course such constant practice was invaluable. Several of these climbs had their risks. I can recall one up by the back of the Rock to Middle Hill Battery as it was then styled. My motive that time was not entirely birdsnesting. I had read how during the siege of 1779 a traitorous goatherd had conducted a party of 500 intrepid Spaniards under a certain Colonel Figueroa up this cliff, and how they were attacked by the British soldiers at Middle Hill and shot down, the survivors (?) being thrown over the cliff, a fall of 1,000 ft. or so. (There were no "hand-uppers" apparently in those days.) I became possessed with a desire to see for myself what sort of a path the gallant attackers had taken, but from what I then saw I am convinced that, subsequent to the "regrettable incident," the cliff must have been scarped and rendered more difficult.

Like all beginners at climbing, I had always before me the bogey of vertigo, or some such malady which I had been told induced climbers, when they attained to any great height to cast themselves down from it forthwith. Hence at first I was always a little nervous at looking down when in very steep and precipitous places. Of course it was very silly and I adopted a drastic and most effectual remedy which removed such follies from one's brain once and for all.

This was going aloft at sea—there were masts and sails in those days—and between various voyages in our old troopships and an occasional trip in a warship I soon acquired the necessary degree of confidence. I remember that I first went to the main-truck of a ship in the venerable old *Simoom*. I had taken the usual orthodox precaution to "square" the captain of the top to avoid

the ignominy of being lashed up and made to pay my footing in public and hied me aloft with a light heart. As I topped the futtock-shrouds I came on a couple of Bluejackets sitting in the maintop engaged in one of those inscrutable jobs in which a marling-spike figures largely and fully reckoning on the integrity of my chum the captain of the same top, I crawled up the topmast rigging and Jacob's ladder and eventually struggled up from the jack to the truck. It was whilst descending that on reaching the jack I suddenly became aware that I was being watched by all hands below on the crowded forecastle where the soldiers, seasick and otherwise, were massed, presenting a sea of faces. Glancing immediately below me (I had avoided doing so before by reason of the old tale of vertigo), I spied the Bluejackets just below the topmast crosstrees one on each side of the topmast shrouds obviously waiting to catch me! I felt that explanation might fail and would in any case be derogatory, so I looked round for a means of escape and, spying a topgallant backstay, swung myself on to it and descended to the deck much faster than I liked or intended, landing safely amid the cheers of the soldiers.

But my glory was dearly purchased. In those days (and perhaps now) the sailorman had a hideous habit of "dressing" all the standing rigging with an evil compound of grease and Stockholm tar as a preservative. In my aerial descent I had gripped the backstay tightly with one leg hitched round it. Needless to explain that my immaculate and much be-laced and be-braided Rifleman's patrol-jacket was smeared from chest to hip with the black grease as were my overalls. But I never advertised my misfortune and soothed myself with the congratulations I received especially from the faithless captain of the top.

To return to the Rock. During my stay there I made various attempts to climb up from the sandy slope above Catalan Bay to the well-known nest of Bonelli's Eagle, which has afforded an object of interest to so many visitors to the Signal Station.

In this I was unsuccessful. Curiously enough the climb, which is spoken of even now, was one which, at the time, neither I nor my companions considered of any importance. I had long cast covetous eyes on the Osprey's nest at the back of the Rock. It was in a bad situation and inaccessible save with a rope. Accordingly one day, in defiance of all Garrison Orders prohibiting the molestation of wild birds on the Rock, and accompanied by a naval officer and another soldier, I proceeded to Catalan Bay. Here we lunched with the Detachment officer and afterwards started on our expedition. After a most fatiguing struggle across the great slopes of shifting sand we reached the first serious obstacle, a low cliff. Skirmishing on ahead, I picked out a practicable line and we set to work to sidle along the narrow terraces, at times not very high up and at others several hundreds of feet above the sea. Arrived above the Osprey's nest, we found a nasty sloping terrace of loose stones which made it dangerous for two men to lower a third, also our rope was totally inadequate for such a purpose. My companions refused to lower me over, and I am not ashamed to say I inwardly rejoiced, for it would have been perfectly foolhardy to attempt it in the circumstances.

Many years afterwards, I revisited the same spot but with proper appliances and, despite all orders to the contrary, took the eggs! That very night I chanced to be dining at the table of the Admiral and among the guests was the Governor and by ill-luck the conversation turned upon the Osprey's nest on the Rock. Somebody remarked that no man could get at it and I was suddenly appealed to across the table as a known climber and expert. To make things worse, some of my guilty accomplices were present and eyed me anxiously. Mercifully the question put to me was whether I thought it was possible for anybody to take the Osprey's eggs? All eyes were turned on me, as with a supreme effort, begot of the perils of my position and with the

thought of those two lovely eggs still unblown locked up in my dressing-case, I replied "No. Sir, I feel sure that anybody who tries to take them will fail." I attribute my good fortune in thus extricating myself and my confederates from what might have been a most unpleasant position entirely to a prolonged study of how British Midshipmen in defence of themselves and their privileges parry inconvenient questions on the part of the Commander.

But to return to our climb. When it was voted that the projected raid was not good enough, somebody suggested "Why go back? Let's go on!" The very originality of the idea was prepossessing. For if one thing was more certain than another in the traditions of the old Rock, it was that owing to the difficulties and obstacles due to natural causes, supplemented by the dilettante hand of the Royal Engineer, nobody could climb round the back of the Rock. At this period, no tradition, let alone record, existed of its having been accomplished and within the preceding few years several attempts had been made and had incontinently failed. An especially gruesome one was fresh in all our memories. Two Bluejackets who had landed from a warship in harbour, with the usual crowd of "liberty men," had broken their leave and not returned. Some days later one was retrieved by the picket after a protracted jollification on shore. His comrade was still however absent and when questioned as to his whereabouts, he could only remember that they had started together to climb around the Rock, but that, not liking the job, he had turned back and gone in for a little amusement in the town. The clue thus given was followed up and the unfortunate missing sailor was found lying on a terrace with some bones broken. Here he had been for some days, needless to say he did not survive his injuries. Such was the cheering precedent for our climb.

After leaving the Osprey's terrace, I struck well up the cliff and hitting on a good ledge worked along it very steadily

my companions following. After a time I fancied I heard a cry and glancing behind me found I was alone! It was an anxious moment, and all sorts of horrors obtruded themselves into my imagination. Carefully retracing my steps, on rounding

THE BACK OF THE ROCK.

a rock I suddenly came upon the sailor lying at full length on an extremely narrow ledge, violently sick! The soldier who brought up the rear was naturally blocked in his advance and he it was whose shout I had heard. In reply to my anxious enquiries, the sick man cheerfully replied that he was "only

chucking out ballast"! To this day I have never been able to make up my mind whether it was the hot sun, the giddy height or the heavy luncheon which had so alarming an effect on him.

He was soon in commission again and resumed his station and we went on. At places it became necessary to change from one terrace to another, perhaps 20 to 25 ft. below. This we effected by means of our rope, the last man coming down on the two parts of the rope hitched around some crag or palmetto bush, after which we overhauled it and proceeded on our way. It was very exciting work especially when it became a moral certainty that by no possible means could we retrace our steps! Eventually we reached the terrace above the Monkeys' Cave, near the Governor's Cottage, whence we soon made our escape and were once again treading the habitable portion of the Rock.

Like all such adventures, the excitement and fun were due to the delightful possibilities of our getting into an impossible place, but fortune favoured us.

Another totally distinct class of climbing at this time was the exploration of some of the immense limestone caverns with which the Rock is in places honeycombed. This afforded great scope for rope-work and climbing. The first we tackled was the famous St. Michael's Cave, which according to tradition communicated with Africa below the Straits and formed the "Channel Tunnel" for the "Rock monkeys" (Barbary apes). My companion in this was Lieutenant Alfred Carpenter, R.N. (now Captain retired). With the aid of some Bluejackets armed with ropes and a good supply of boat's lead-lines we reached the bottom or rather bottoms of the cave coming to pools of clear fresh water in every case. The last 200 ft. of the descent was down a chimney-like fissure in the limestone. At one point this narrowed so much that only the smallest of the party could get down it.

Carpenter and myself and one other got through. The Bluejackets named it "Clincher Hole." It is interesting to record that upon reaching the bottom we found we were by no means the first who had done so, for on the limestone roof above us were spaces blackened by candle-soot on which were scratched the names of officers and dates, some going back to Crimean days! In the absolute stillness and dryness of these depths these old records seemed as fresh as the day they had been scratched with the broken stalactites, which lay about us on the floor. My companion who was a scientific officer in the Hydrographic Department calculated by means of his lead lines the total depth of the cavern from entrance to the pools of water to be 500 ft. or roughly 500 ft. above sea-level. The air was quite fresh and the only danger lay in the risk of our return passage being blocked by sliding débris from above.

Another famous cave I explored, with a party of the 71st Highland Light Infantry was the one in the Europa Ravines below the Chief Justice's House, known as Glenrocky. This cavern is the one where the reputed skeleton of prehistoric man was discovered. It is a marvellous place, and, being the light man of the party as well as the pioneer, I went in a bowline through the hole in the "ceiling" and gained "the lowest storey" out of the three series of caverns we explored.

At this time my brother officers with one exception did not take at all kindly either to climbing or exploration, but I was never at a loss to obtain good recruits from the Navy or 71st Highland Light Infantry.

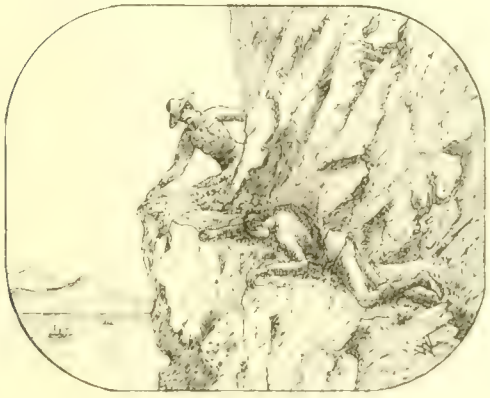
In the spring of 1880 I left the Rock for our Depôt at Winchester. Not long after, I heard how the fashion I had set had found imitators among those I had left behind in my Battalion. One party elected to explore St. Michael's Cave with almost tragic consequences. For a peculiarly long subaltern of Rifles

succeeded in becoming jambed in "Clincher Hole." In his case, it was not owing to extra width of shoulder or depth of chest as in that of the British bluejackets who had been unable to pass through it, and I imagine his sticking was more of the nature of a fish-bone across the gullet type. Anyway he became fixed, to the consternation of those below him who thus saw their retreat cut off. The tale goes that at one time it was under consideration to sacrifice him for the good of the majority and remove him piecemeal. Happily, he was eventually dragged out.

Equally bad luck attended another party of my brother subalterns who with more pluck than knowledge and less skill than either gallantly attempted a climb up the back of the Rock, with disastrous results, for they finally got to the spot which somehow is always found by unskilled climbers, where they could not go on and dared not go back! Luckily their plight was noticed from the Signal Station and the alarm was given. After the inevitable report to the Town Major and his myrmidons, the services of the Royal Artillery and Engineers were invoked, ropes were procured and the luckless youths extricated from their predicament. It was after this that the Governor rose in his wrath and a Garrison Order was issued forbidding officers to climb the Rock.

But all this happened long ago. When in a sudden access of hysteric caution following on years of "go as you please" all the upper portion of the Rock was enclosed by a high spiked iron paling, some unimaginative official had the fatuity to style it officially "The Unclimbable Fence," and numerous Orders were drafted with respect to it in which it was thus described. It is hard to imagine a more direct challenge to a man addicted to climbing. At this psychological moment I chanced to land at Gibraltar on leave from England. I *climbed that fence*, not for pleasure or for vanity, but as a matter of duty to the confraternity

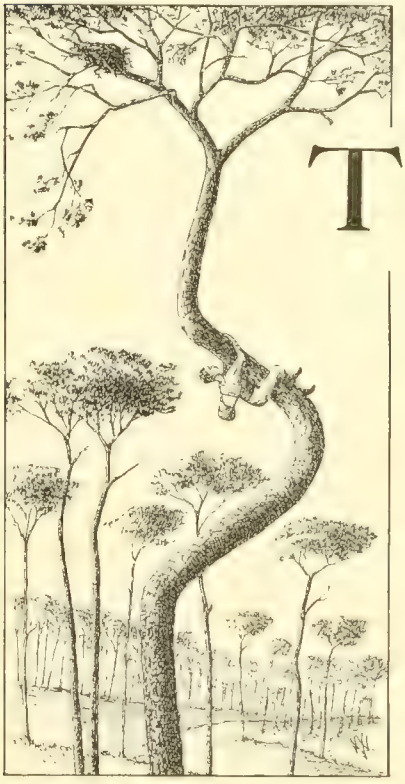
of birdsnesters. My "crime" was never taken judicial notice of, and here I was happier than the luckless private soldier, who not long since committed the same offence and according to report was charged with "Neglecting to obey Fortress Orders, in that he, at Gibraltar, on April 1, 190—, contrary to the Fortress Order directing all persons to abstain from doing so—*climbed the Unclimbable Fence!*"



CHAPTER V.

TREE CLIMBING.

A classic example—Tom Brown's sound advice—The four requisites for a good tree climber—Swarming up branchless trees—Working along spreading, horizontal or pendent boughs—A famous Raven's tree—An awkward climb—The "S" and its difficulties—Reach the nest—Trees too large to swarm up—Value of pendent boughs in some cases—Tree climbing with ropes—Use of light casting-line and lead—How to get a rope over a high bough—Ascending with the aid of a rope—Arrival at branches—Transition from rope work to climbing—Extra large trees—Climbing by successive stages with rope—Climbing irons—A nasty accident—Irons and rope an ideal plan—Dress for tree climbing—Uses of light line and fishing creel.



THE art of tree climbing, for art it is, exists in an embryonic form in most schoolboys. Most lads however discontinue the practice just at the age when they are developing strength and skill enough to become fair climbers. No better advice for the youthful climber can be found than in "Tom Brown's School Days" and the famous story of the Kestrel's nest in the tall fir in Caldecott's spinney has given inspiration to many a lad, whilst all through my life, whenever I have attained the "decisive point" in a big tree and felt sure of the nest, I

have mentally ejaculated with Scud East "All up with the old Magpie now." Tom's precept, "You can't hurt if you get a good hand-hold. Try every branch with a good pull before you trust it and then up you go!" is unequalled in our language. To this I would add "Always get a hand-hold and foot-hold as near as possible to the trunk or branch you may be on." By keeping these two rules in mind I have come with safety out of many hundreds of awkward and dangerous trees. To become a bold and successful tree climber does not require great bodily strength, else I should have never climbed at all, nor does it require powerful muscles. What is wanted is quickness, agility, ready resource and good nerve. The first three enable a man to work his way up many a tree which would defeat the mere gymnast whereas the last prevents him from being deterred by possible dangers, and, above all, when he does get into trouble helps him out of it.

When trees are not too large to swarm up or have branches enough to help the climber on his way, no accessories in the way of ropes or irons are wanted and I propose to deal with this, the normal sort of tree climbing, first. The main obstacle to all tree climbing is the difficulty of surmounting the portion of the tree without branches. This exists in its most trying form in big fir trees and larches and here the gymnast is at an advantage. For many years I used to swarm up lofty fir trees after Ravens' or Kites' or Carrion Crows' nests, many of them branchless for 30 to 40 ft. The labour however is excessive and if many trees of such a type have to be visited in one day, it is far better to have recourse to ropes, of which more hereafter.

When you have arrived among the branches, the nature of the tree must be kept in mind. Elms are brittle, oaks just the reverse. In fir trees rotten branches should be removed during the ascent; not uncommonly they are rotten at the point of junction with the

bole and give way suddenly. A good rule is never to trust a branch in a fir unless some green spines are to be seen growing on some portion of it. Where nests are placed away from the main trunk, some care is necessary. In case of most deciduous trees, such as oak, elm or beech, the branches where nests are usually placed rarely slope more than 45 degrees or so. In working up such places a very secure hand-hold is necessary as it may easily happen that the climber slips round under the bough. If this occurs, it is generally best to continue the climb along the underside until some branches are reached which make the process of righting oneself easy enough. In fir trees, on the other hand, a nest is often placed on a bough of which the slope is anything between 45 degrees and the horizontal. The former requires care and is best tackled by swarming along it ; when a branch is horizontal, or nearly so, provided it is big enough, it may be better to sit astride and work out along it, as on a vaulting horse. Where a bough actually dips downwards, always turn round and face the tree and slip down it.

The preceding are all taken from examples of climbs I have made. Quite the worst and most alarming of my climbs of this description was after a Raven's nest. This was in a tall fir tree which was popularly supposed to be unclimbable, close to the Duke of Kent's Farm near Gibraltar.

One evening at our Mess the conversation turned as to whether it was possible to get at this nest and in the course of it, it transpired that two subalterns had on that very day attempted it and had failed. One of them was an exceptionally powerful man. Both were given to scientific observation and they measured the height of the tree by means of its shadow as being 72 ft. As a proof of the impracticable nature of this particular tree they described how two Spanish herds who had joined them had alike been defeated in the attempt to scale it. Later on that same

night, my particular birdsnesting ally and companion during my first five years in Spain, Harry James Fergusson, came to my quarters and propounded a scheme for taking the nest on the following day. I demurred, as I had not properly watched the birds and was in consequence uncertain whether the nest contained eggs, and also because my part of the proposed entertainment was to climb the tree whereas his was to get the inevitable "rise" out of the others by subsequently in the event of my succeeding, pretending that we had failed. He was however a wilful man, and met all my objections by assurances that he knew I could do it, if only I tried.

So next morning saw us galloping out along the beach to the "First River" and onward. Arrived at the tree—a dead fir about 75 ft. high—I took careful stock of it and was not at all reassured. For 20 ft. it was just possible to swarm the trunk, after which it bifurcated and was easy enough, the portion in which the nest was placed inclining outwards at an angle of 45 degrees for 10 or 12 ft., becoming again vertical for another 10 ft. So far, so good, it was awkward, but obviously possible. But now came the trouble, for in the course of the next 20 ft. the tree-stem emulated a cork-screw in form and described a splayed and twisted "S" before once again returning to the vertical below the lowest branch over 60 ft. from the ground. The sketch at the commencement of this chapter is from one drawn at the time of our visit, and gives a better idea of the awkwardness of the situation than does my description. It was obviously fairly simple to swarm up the tail of the S but at the lower curve of it the trunk bulged ere it took the backward turn. The shape of the tree was however by no means the greatest obstacle to reaching the nest, for the fir tree, as I saw at a glance, was clad with the well-known flaking bark peculiar to its species which made it extremely slippery if not dangerous. I have a theory of my own that in all big fir trees the higher one ascends,

the more slippery do the branches become, at any rate they always feel so. Possibly this may be due to these upper branches being more exposed to the heat of the sun's rays than are the lower ones.

Now to the climb. I managed to tackle the first 10 ft. or so by mounting on Fergusson's broad shoulders, after which the trunk became more climbable. It was a stiff and slippery swarm, but all went well until I reached the lower bend of the S. At this point, as I was cautiously hauling myself over the hump and round the "corkscrew" portion, the treacherous bark slid in my grasp and so did I, swinging round under the bough. I held on like grim death, with fingers interlaced and legs twisted around it. It was horribly uncomfortable thus hanging back downwards with 50 ft. clear to the ground below and for a moment I was puzzled what to do next short of sliding back ignominiously. It was clearly impossible to regain the upper side of the slippery trunk so I made the best of a bad job and swarmed up along the lower side and was not a little relieved when I found myself at a vertical portion once again where I could regain my seat, so to speak, on the slanting part immediately below it. A few feet more and I gained the friendly spreading boughs near the nest. The latter contained five young Ravens. I am not ashamed to say that I did not embark on the return journey till I felt I had thoroughly recovered from my misadventure As so often happens, the return proved to be comparatively easy. It is superfluous to go into details of how at dinner that evening, our brother officers were cautiously led on to understand that we had found the tree to be too much for us and how, at the psychological moment, they were permitted by my aggravating comrade to become aware of the truth. But after all such victories are too dearly purchased and it took me some time before I felt anxious to tackle awkward fir trees. Of one thing I am well assured, namely that the Ravens in selecting this particular tree were perfectly aware of the difficulties it presented to the

climber. For there were scores of other trees all round it some higher and with fewer branches and apparently more formidable but as regards security from attack none of them could be compared to the one the Ravens had built in.

There are very few large trees which cannot be climbed with

CLIMBING A BIG SPANISH OAK TREE BY THE AID OF A PENDENT BOUGH.

greater ease and rapidity with the aid of ropes than without. Now and again some of the largest trees, which are unscalable without the aid of some artificial means of reaching the lower branches can be successfully tackled by ascending from the extreme end of some pendent bough which enables the climber to effect a lodgment well up in the tree, likely enough in some part whence a further ascent is an easy matter.

I have visited several nests in very lofty trees by this means; usually the only trouble is at the start but if the branch bears the strain then it may be reckoned on as a safe one throughout, and it naturally gets stronger every foot one swarms up it. A branch of this sort is climbed in a similar fashion to a rope but is, as a rule, easier.

When no such accidental advantage can be utilized, recourse must be had to ropes. For tree-climbing nothing can equal 1½ in. manila rope. It is pliable and "renders" well over a bough and its lightness enables it to be cast upward and over a bough at some height above the ground. One hundred feet of manila will do for most trees as it will serve to sway up a climber 45 ft., allowing 10 ft. spare for the bowline and the portion in the hands of the assistants.

But a 1½-inch rope cannot be cast over a branch 45 ft. overhead or in fact at anything approaching that height. For this purpose a light line is wanted, a deep-sea fishing-line of the pattern known in our Navy as a mackerel-line is as good as any. To the end of this should be attached a leaden weight of suitable size and form. After many experiments I have found a disc measuring about 2¾ in. in diameter and with an axis of ¾ in. bevelled off to ¼ in. round the circumference by far the most suitable for "shying." Its weight is 18 oz. A picture of this appears at the end of this chapter.

By coiling the line neatly in the left hand, with a few spare coils on the ground beside one, this leaden disc can be thrown up a considerable height. When it has been cast over the bough required, the line is jerked until the weight overhauls the line and runs down. The weight is then removed, and the line made fast to the 1½ inch rope by means of a rolling-bend or a clove-hitch about a foot or so from its end, great care being taken to make a half hitch close to the point of the rope.

This is very important, else when hauling up the line the rope may get caught, especially as it passes over the bough. The rope having been overhauled, the climber gets into a bowline (or a bowline-on-a-bight) or if the tree be very big and awkward, into a canvas sling, and is hauled up.

CLIMBING A TALL FIR TREE WITH THE AID OF A ROPE.

During the ascent he should do all he can to "lighten-up" his weight. As soon as the tree becomes small enough for him to encircle even a portion of it with his arms, he must do so and the

hauling-up party should watch him and second every movement he makes by a judicious pull. It is wonderful how easily and rapidly a skilful climber can thus ascend a tree.

I attach great importance to the climber thus seconding the efforts of the assistants, for by doing so he reduces the friction of the rope over the bough above and thereby minimizes any risks of a mishap. For by adopting such means not only does he get a good hold of the tree, should the rope part, but by reducing the friction and consequent strain, the rope is not nearly so highly tried. In the preceding picture a 12-stone man is being run up a fir tree by three others weighing between them some 38 st.

The fir tree in this instance was about 60 ft. high and the lowest sound bough over which the rope was hove was 35 ft. from the ground. A much weathered and somewhat rotten stump on the opposite side of the tree to the climber affords a welcome rest to a man climbing without a rope, as I can speak from experience, having ascended it in 1878 and in 1879. This photograph was taken in 1903.

It requires little science or knowledge of the strains on ropes to understand that if the 12-stone man elected to hang like a sack of beef and left the 38-stone weight to haul on him with all their united strength, a rope which fouled up above might break.

When the climber arrives at the bough, he must get a secure hand-hold and those below must quickly ease up rope enough (say 2 or 3 ft.) to enable him to swing himself on to the branch and come to a rest.

At this period of the struggle, it is advisable for all hands to take a rest. I invariably do so and repeat to myself the formula, "All up with the old Magpie now," or words to that effect.

Sometimes the transition from rope work to climbing involves some difficulties and risk, since the bough may itself be too big to afford a secure hand-hold. Hence it is most desirable, when

possible, to get the rope over some bough above the lowest one, by which means a man can be hoisted right on to the lowest. If this cannot be done, the party below must handle the rope gently at the instant the climber mounts on to the top of the bough, for any carelessness at this juncture might result in him being pulled over the bough and out of the tree! When a footing among the branches has been secured, the bowline (or sling) should be removed and made fast to a bough and the ascent continued in the ordinary way. But in a big tree, especially a huge oak or cork tree, it may happen that the final victory is by no means assured when the first bough is reached. For between it and the next one above there may be many feet of thick trunk, utterly unscalable. Now comes the opportunity for the man who is accustomed to work at heights and who, further, is skilful in the handling of ropes. For, after hauling up and making a coil of what he may require, he makes a cast with the rope over the next bough above and either swarms up with the aid of the hand-hold thus afforded, by holding the two pieces of the rope, or, in more awkward situations, drops the fall of the rope to his comrades below and makes himself fast to the hoist and repeats the operations already described. Sometimes it may be necessary to do this several times before the tree diminishes in size enough for the climber to proceed by ordinary methods. The uninitiated may imagine that such a process requires an endless amount of rope but this is not so. Assume for example that the climber has been hoisted to a convenient bough 40 ft. up. This requires about 90 ft. out of the hundred available. He now sees that until he has ascended another 30 ft., he cannot do without a rope and that half-way up, say 15 ft. above him, there is another good bough. To reach this next stage but 80 ft. is required and for the second under 95 ft. (always allowing 10 ft. spare as described). Of course in descending it would be quicker were he to be provided with 150 ft. and thus come down in one

movement, but in practice the operation of stopping when half-way down and hauling up the rope and dropping it over an adjacent bough involves but little trouble. I have met with occasions when it was more convenient to throw the line and lead weight over a bough than the rope itself. When this is done, the same process is repeated as at the first start and the rope is subsequently hauled up. Frequently in emergencies a small length of rope used as a life-line is of great assistance and for this I usually carry 20 ft. of silk rope.

Very likely some may have been surprised that I have hitherto made no mention of climbing irons. The reason is because I have for many years strongly discountenanced their use, save as an adjunct to climbing with a rope. I used them myself until 1876. It was then that I first met with Lord Lilford and it was owing to him that I gave them up. For he described to me how he knew of an unfortunate man who, having climbed a tall tree with the aid of irons, lost his hand-hold and fell backwards. His life was saved by the cause of his disaster, for one iron was so deeply set in that it held. But he hung head downwards with his weight on his dislocated ankle! To assist him by climbing to him was impossible. Fortunately the accident occurred in a civilized country where it was possible to fetch a ladder and by this means he was rescued.

At the time of my meeting with Lord Lilford I was constantly riding alone into wild spots in Spain, picketing my horse and climbing big trees. After hearing the story I came to the conclusion that it was tempting Providence to continue to use irons in a country where, if one came to grief, the chances were against being found and where, moreover, ladders did not exist.

For over twenty years subsequently I would have nothing to do with them; meanwhile, in 1882 I had taken to using ropes in trees, but it was not till 1898 that I once again became a

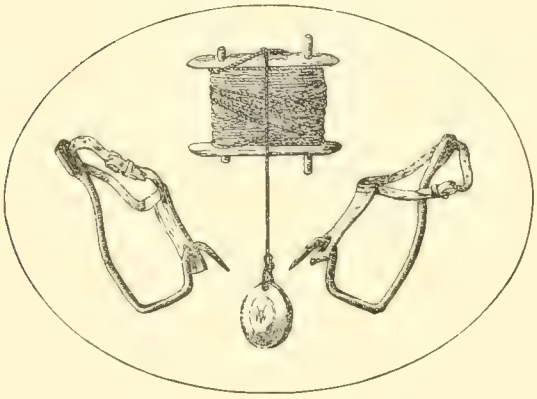
possessor of a pair of climbing irons. I was at this time at the Royal Military College, Sandhurst and I found them of very great assistance in climbing the large fir trees, especially with the aid of a rope. In fact, a combination of ropes and climbing irons reduces the risk and labour of fir-tree climbs to a minimum. They can be used with great advantage in climbing medium trees without having recourse to a rope but the climber should be ever watchful to keep a good hold of the tree. I have seen careless climbers injure themselves by striking the inside of one leg with the spiked iron strapped on the other and at all times they are aids which should be used with extreme care. When scrambling high up among boughs, they are a source of danger and should be removed.

So much for the various ways of tree-climbing. Now as to the dress. Gabardine knickerbocker-breeches and gaiters or stockings are as good as anything and a waistcoat with close-fitting light gabardine sleeves is excellent since they protect the arms from cuts and scratches when swarming; they are particularly useful in big fir-trees. How often have I reduced the sleeves of a flannel shirt to shreds and regained *terra firma* with my arms smarting with abrasions and scratches filled with sharp particles of bark, gum and turpentine!

A close-fitting fisherman's guernsey is a good climbing rig both for trees and rocks but has the objection to a photographer that it is difficult, if not impossible to get at one's waistcoat pockets. Boots should never be worn in big tree work unless with rope soles; stockinged feet are usually best.

An essential part of the tree-climber's equipment is a strong line wherewith to communicate with the party below. For this purpose I usually take up with me my line and lead. The former is wound on a wooden reel made to fit in one's hip pocket where it can be stowed without getting in the way. There are very few occasions when its services are not in request, whether it be to

lower down eggs or young birds or to haul up a camera or a bird-trap. A stout wickerwork fishing creel makes an excellent general receptacle on all such occasions and is less likely to get caught up in the process of hauling up or lowering than is a bag or sack, besides being more easily packed and affording some protection to fragile articles such as eggs in boxes or photographic apparatus.



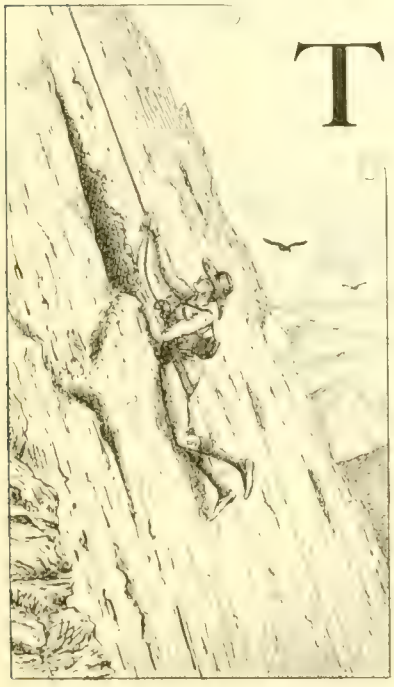
A CLEAR DROP.

Drawn by Ida Verner from photographs.

CHAPTER VI.

CLIFF CLIMBING.

Alpine climbing—Birdsnesting and mountaineering—Use of ropes—A technical knowledge necessary—Uses of a "life-line"—Dislike of mountaineers to rope work—Risks of working a rope single-handed—Various uses of ropes—Crossing a gully—Life-line and "traveller"—A naval development—Popular ideas of using ropes on cliffs—Carrying ropes in wild countries—Alpine Club ropes, weights, &c.—Bowline-on-a-bight—Canvas sling—Carrying long ropes—The lowering party—Numbers required—Good discipline essential—Duties of the "captain"—Posting a lowering party—Use of whistle—A simple code of signals—General precautions—Importance of knotting and "seizing"—A slippery hitch—Awkward situation—Tyrolean silk rope—Its manifold uses.



THE world-wide notoriety given to all matters connected with Alpine ascents has made many people imagine that climbing is a pastime exclusively enjoyed by those who visit Switzerland or similar mountainous countries. In fact that to be a mountaineer it is essential to form one of the band, who with the aid of guides and all modern appliances annually penetrate the eternal snows and attain the summits of remote mountain peaks. That such performances have great charm for many is undeniable and I look with the greatest admiration and respect on some of the genuine

Alpinists who have repeatedly given proofs of their nerve and endurance in their tremendous struggles with the forces of Nature. Unluckily the genuine mountaineer is aped by a host of paltry followers who have reduced the science of climbing to a point at times narrowly verging on the ridiculous. Many of the so-called climbers are no climbers at all, and it shows their belief in themselves and their capabilities that they will submit cheerfully to be tied together like strings of donkeys and dragged, hustled and pushed through snow or across ice for the mere satisfaction of saying that they have reached some point a trifle higher than the rest of the surface of the earth in the immediate neighbourhood. Such people, to use the expressive phrase of a naval officer who has been my companion for many years but who shies consistently at big hills, would seem to find unbounded joy in ever "pandering to the sky-line." The annual list of victims of both sexes of this class is painful evidence of the unfitness of many of the so-called climbers. The result of these popular ideas about mountain climbing is that when any man in the course of the pursuit of natural history or sport chances to be attracted to mountainous countries where climbing, in its more literal sense, is essential, he is at once supposed to be one of the confraternity of Alpinists and is assumed to adopt their ways. Thus many people, hearing of some of my expeditions into the mountains after birds' nests, ask me whether I always rope my party together and carry an alpenstock?

Without venturing to intrude into the sacred domain of the traditional Alpinist, or to criticize his methods, I am content to say that for the class of climbing I have indulged in for so many years, to rope one's party together would be almost suicidal and that an alpenstock would, as a rule, be an unmitigated nuisance. At the same time I am keenly alive to the advantages to be gained by a rational use of ropes, as also to the comfort and assistance to be got from an alpenstock under certain conditions. In fact, owing

to injuries, I have of late years been compelled to make use of one, when ascending steep slopes. The moment however a bit of genuine climbing has to be done, the alpenstock becomes a constant source of trouble and danger and in most instances has to be discarded at any rate for a time, until the actual climbing, as apart from scrambling up steep hillsides, is over. The fact is that in cliff climbing a man must depend upon his own nerve, eye and skill to carry him through. If these fail him or are likely to fail him, he has no business to be one of the party and I for one would respectfully decline to be roped to such a man under any conceivable conditions.

It must be remembered that what may be useful and even necessary for men crossing snowfields or glaciers may be entirely unsuited to the class of mountaineering required in birdsnesting. For as a rule, where the snow-line begins the bird-life, so far as nests are concerned, ends. I have only on three occasions when in quest of nests had to touch the snow-line and although at other times the rocks may have been slippery with ice and the ground whitened with snow, the conditions were totally distinct from those which have hourly to be faced by the regular Alpine climber.

Ropes improperly used are a fertile source of danger and my own experience is that very few men, save indeed some naval officers, know enough to use them in all circumstances with advantage and safety. Some of the incidents which I shall describe later will I think give point to what I here say.

First as to the use of a rope as a life-line, to ensure that a man who may slip at some awkward point may be saved from a dangerous or possibly fatal fall. When rounding some precipitous bluff or traversing some dangerous bit on the face of a crag on a steep hillside, it is sometimes most desirable to lead a rope across the same, whereby the less expert climbers may be provided with a good hand-hold in the event of a slip. In such a case both

ends of the rope should be if possible made fast to the rocks or held by men who have found a good secure foot-hold. I never recommend roping at such a place. I have happily never had as companions men who could not avail themselves thus of a life-line with far better effect.

This incidentally brings me to a somewhat interesting trait I have noticed in many of the fine climbers I have met among the rugged sierras of Spain, their inherent mistrust of a rope of any sort. As a rule, if a goatherd cannot get past a bad place without a rope he will not attempt it at all. I imagine this dislike to be inherited, due to tales handed down of men who have been killed by trusting to ropes. Judging from the average condition and size of the ropes ordinarily available, those employed by the *arrieros* (mule-drivers), this seems reasonable enough.

Again, it may happen that a cliff may be reasonably safe to descend for a considerable distance and yet that here and there a rope may be of the utmost value to guard against a slip. In such cases it is of enormous advantage to get a trusty comrade to place himself at some point whence he can see most of the face of the cliff and tend a rope by the aid of which the climber can descend in a bowline.

The whole art here depends upon the comrade above neither checking the climber in his descent nor giving him too much rope. For the former may cause him to miss his footing and throw him off his balance, whilst the latter is doubly dangerous, for should the climber slip, he will be brought up at the end of the slack with a violent jerk which may prove awkward for the man above. Hence two men above to tend the rope is an advantage although frequently impossible to arrange for. To my mind the most dangerous method of using a rope as a life-line is to make it fast above with no assistant to tend it and to climb down, keeping a strain on the rope. It sounds perfectly simple and safe and so it is when

the descent chances to be a clear one. This, however, is rare and the complications which ordinarily ensue from such an operation are as numerous as they are unexpected. I will merely cite a few. In descending, the unused coiled-up portion of the rope is a fertile source of discomfort, hitching itself up on every possible opportunity and frequently necessitating a partial return upwards to clear it. Later on when a bad spot is reached and the services of the rope are needed, no sooner does the climber's whole weight come on it than it has an aggravating way of suddenly giving up a foot or more, owing to some temporary foul up above having rendered. So much for the joys of the descent, now for the ascent. On the return journey, if the free end of the rope be left to be hauled up after the climber, it often finds some place to curl round and jamb especially if wet. If, on the other hand, the climber from time to time makes up the slack and carries the coil with him, at the most unexpected times a bight will hitch itself on some unseen protuberance of the cliff and, as he swings himself upwards, he will suddenly find himself hauled back by the demon bight violently pulling at his shoulder! This last experience, the most perilous of all, actually happened to me twice in the course of a few minutes when re-ascending a cliff, the base of which lay 400 feet below me. Never again!

It would be impossible to describe all the occasions when a piece of good Alpine rope may make all the difference between success and failure.

Many years ago I discovered an Egyptian Vulture nesting in an horizontal fissure near the summit of a small pinnacle crag. The whole place is not 40 feet high, but the upper part of the crag overhangs, whereas the lower is as perpendicular as a wall. There is a wide ledge on one side, easy of access but separated by a gully from the fissure containing the nest, to cross which is merely a step. But herein lies the crux of the whole business. The wild birds

which have resorted to this place from time immemorial are perfectly well aware that this one step across the gully is exactly what few men care to take, for there is no foothold on the far side. But although a rope will not help a man to get at the nest either descending from the summit or ascending from the grassy terrace only 25 feet below, the ledge provides the proverbial way round for I found it quite possible to pass my Alpine rope from the adjacent ledge laterally round the crag so that it led along through the fissure containing the nest and to join the two ends together behind the main crag. As I was alone at the time, I made my silk rope fast round my body and attached myself in a bowline acting as a "traveller" running along the fixed rope, thus securing myself against the results of a possible slip. Gripping the life-line firmly, I made a spring forward and, with a light touch of my stockinged foot on a small projection, swung myself far enough to grasp the line well across the gully. Next instant I was in safety, lying at full length along the narrow ledge. Although within a few feet of the nest, the process of worming one's body along between the rocks both above and below was awkward and painful. But the return journey was even worse, for it was impossible to turn so I had to back out of it and more than once in doing this I got jambed and could with difficulty free myself. Arrived at the gully, of course I could not see where to place my foot, and in consequence I slipped and, the life-line not being very taut, I went down some feet. The silk traveller on the line however brought me up as I had expected and next moment I had hauled myself back again on the ledge. Some years later I took Rear-Admiral Arthur Farquhar to the same place and we repeated the process, but with improvement. For the Senior Service took the precaution to improvise a tackle with the spare end of the rope with which he got such a strain on the portion round the cliff that it more resembled a handrail than a line. He further rigged himself with

an inhaul to his traveller with the result that after achieving his desire and taking the coveted eggs himself, he was brought back or

ENTERING A NEST INACCESSIBLE FROM ABOVE AND FROM BELOW.

rather run inboard in style to a place of safety. I was able to take a picture of my comrade when thus happily employed. It is an

excellent likeness but one which, it is unnecessary to say, he never presents to his country's foes.

I hope I have made it clear that ropes thus used by experienced hands are at times of untold value, whereas, when in inexperienced hands, they may prove a greater source of peril than of security. All the same, they are absolutely essential in innumerable cases, and nobody can hope to reach every point he may require until he has thoroughly mastered their use.

But if there is, as I believe, a certain amount of confusion existing in the minds of very many as to the relative spheres of action of the Alpine climber and the birdsnester, there is even more popular misapprehension with regard to the using of ropes for the descent of the cliffs.

How often have I been advised to go to Flamborough Head or St. Kilda or elsewhere and just see how the men do there. In reply, I may say I have been to various places on our sea-coast and have never yet seen anything which is the least applicable to the class of work which it has been my pleasure to devote myself to for so many years. To begin with, the conditions in the two cases are absolutely different; for the professional eggers know exactly what lies before them and having the experience of former descents, know precisely whence to start from, what points can be reached and what amount of rope is required; further, they know whether the cliff is a sound one or the reverse and arrange accordingly. Contrast the wandering naturalist. He has to find a way to reach a point above the nest, a matter in some cases of the greatest difficulty and danger. Having fixed this point, he has to make sure of a good footing for the lowering party, to ascertain whether the cliff is overhung and whether the nest is accessible or the reverse, how much rope will be required, what ropes it is possible to convey to the desired point, and, last but not least, whether the cliff be sound or rotten. This may seem a long list of contingencies, but there is not a single one

of the half dozen that has not repeatedly cropped up during my own experiences, and inattention to any one may spell failure or delay or possible disaster.

So much for the difference between the problems to be solved by the two classes—travelling naturalists and resident fishermen. Now as to the material. The men who make their livelihood by descending cliffs are equipped with all necessary gear for their work. There is practically no restriction for them in the matter of bulk and weight since they usually work within a reasonable distance of their homes and their ropes can in many instances be carried on carts. Thus they can afford to employ good stout ropes both for lowering the egger and for a life-line for him to hold on by and "lighten up" when he may require to do so. Not uncommonly such men have regular canvas "breeches" or seats made in which they are slung. Further, to prevent the rope chafing as it is paid out over the cliff it is often run through a length of heavy leather hose-pipe or over a big wooden tray known as a "tortoise," fitted with a roller and wheels. Lastly the rope itself is paid out round a stout crowbar firmly driven into the ground. Such are only some of the accessories of many of the professional cliff-eggers.

Some years ago a gentleman in Ireland who had taken many Peregrines' and Choughs' nests in various cliffs showed me his equipment. It consisted of a wooden "tortoise" as above, a crowbar, a $3\frac{1}{2}$ in. rope to be lowered in and a 2 in. rope to be used as a life-line. This was an excellent fit-out and perfectly adapted for the purpose, since he could convey the lot on an Irish car along some country road and, at the worst, have only a short distance for his men to take it on their shoulders to the cliff. But to the naturalist wandering through a wild country seeking nests, all such refinements are of course utterly out of the question. Weight, and weight alone, decides what is possible to be carried, and in all

mountainous countries, such as the wilder parts of Spain where wheeled transport is unknown, the weights must be so adjusted as to enable their rapid transference from the panniers of the mules and donkeys to the shoulders of the men. As for many years I myself acted the part of one of the said men, and took my share in the weight-carrying, I can speak with feeling. I constantly worked alone, carrying rope, gear, food, glasses, &c., and I found that the utmost that I could carry on a long day's tramp on foot through the sierras without being unduly tired was 26 lb. Thus it came about that at the time my friend in Ireland was using $3\frac{1}{2}$ in. and 2 in. ropes as his lowering and life lines respectively, I had perforce to be content with $1\frac{1}{2}$ in. rope and naval cod-line. This rope is the manila rope in use by the Alpine Club 100 ft. of which weighs just 5 lb. I have a length of 30 fathoms of it, 180 ft. (9 lb.) which has done admirable service both on cliffs and in big trees for thirteen years.

It was with such an equipment that I have been over some very high cliffs, slung in a bowline-on-a-bight and innocent alike of crowbars or "tortoises" above me or the orthodox canvas breeches below me. The renowned bowline-on-a-bight is, in my opinion the only knot to which a man should trust his life over a cliff. After tying this knot in the normal fashion, with two equal-sized loops or bights, it should be carefully readjusted so as exactly to fit the body, one bight being the size of the man from the top button of his waistcoat, round the body just below the armpits, and the other long enough to pass under the thigh and up to the starting point. A normal size would be about 40 in. for the small bight and 50 in. for the larger, subject to subsequent adjustment. A man thus slung has perfect freedom of movement for both legs and arms and cannot fall out of the sling in the untoward, but ever possible, emergency of his being stunned by a falling stone dislodged by the rope from above or injured by any other

mishap. It is as well to fold a waistcoat and with it pad the longer bight, else it is apt after a time to feel rather sharp, especially if a thin rope be employed.

Owing to the risk of a thin rope becoming frayed on a cliff, I have during the last ten years often employed 2 in. rope in place of the Alpine $1\frac{1}{2}$ in. which I have relegated to tree work or for

CLIMBER IN CANVAS SLING READY TO DESCEND A CLIFF.

use as a life-line and for general purposes as hereafter described. One hundred feet of 2 in. manila weighs about 9 lb. and, owing to its bulk is as much as a man can carry with comfort when climbing among rocks. It enormously adds to the comfort of the climber if in place of making a descent in the bight of the rope, whether it be 2 in. or bigger stuff, he be provided with a canvas sling. This is nothing more than a belt of folded canvas

sewn with bolt-ropes, 3 in. broad and about 38 in. in length, which is joined at each end to a second one slightly wider and about 44 in. long. At the ends are a couple of thimbles eyeleted. This belt is adjusted to the body in a manner exactly similar to the bowline on a bight, the longer canvas loop being passed under one thigh and the shorter one round the body under the armpits. The rope is then rove through the two eyelets for about 4 ft., the eyelets being brought together and secured with two half-hitches. The end of the rope is then passed over one shoulder and under the other and secured again to the eyelets, so as to prevent the sling slipping down. In the preceding picture the method of adjusting the canvas sling to the body and of attaching the rope is shown.

Among very big cliffs where there is a chance of a rope jambing or fraying against any sharp edge I would strongly recommend the employment of 2½ in. rope as a lowering line and of 1½ in. as a life-line. The first is a cumbersome affair to carry, but it is as well to have in big places tackle which is beyond suspicion.

A most difficult problem at times is how to carry sufficient length of rope to ensure no join being necessary. Up to 1906 I usually carried three lengths of 100 ft. apiece and on an emergency joined them up. If the latter process be effected by means of a long-splice, well and good. But the exigencies of time and place as often as not prohibit this, and recourse must be had to bending the ends together. Under normal conditions this may be all right but in going over a strange cliff, it is impossible to know what difficulties may be encountered and it is most unwise to take unnecessary risks. When a long piece of rope is required, say 200 or 300 ft. or more, the best way is to have it in one piece made up into separate coils of 100 ft. each, with 6 to 12 ft. drift between each coil. Each man of the lowering party can then sling 100 ft. round the body and follow in Indian file. In the picture a lowering party are shown thus carrying 50 fathoms (300 ft.) of 2½ in. rope.

When awkward places are reached, it is usually better to sling the coils on the outer shoulder since it may be necessary from time to time to pass them from hand to hand and deposit them on ledges or other projections whilst some difficult bit has to be climbed. It is essential that ropes should be neatly coiled and

METHOD OF CARRYING A LONG PIECE OF ROPE DURING A CLIMB.

seized round with string or yarn at several places so as not to present loops which may catch on projections on a cliff. The great danger incurred by using knots to join ropes is not the possibility of their drawing but their liability to jumb in some cranny of the cliff or against some sharp edge, either when lowering or hauling

up a dead weight. An awkward experience of this very thing occurred when I was descending to the nest of a Bearded Vulture. On this occasion the ready resource of a comrade alone got me out of what might have been very serious trouble. Hence I am now somewhat shy of using ropes knotted together.

The very essence of good cliff work is absolute discipline throughout the undertaking, especially as regards no talking or "back chat." To ensure this, before descending I invariably appoint one man "captain" of the show and impress on the others that there is no danger unless they wilfully cause it by inattention to the instructions I have given them. For a small cliff two men are sufficient to haul a light man up but three is a better number. I have frequently been lowered over small places by one man but do not recommend it. It is all right if all goes right, but if things go wrong it may lead to trouble.

The captain should see that the end of the rope is (whenever possible) strongly secured to some adjacent crag. This at times is of great use on an emergency arising. He then settles himself down in a sitting position as close to the edge as he can safely find a secure footing, and passes the rope under his right arm, Nos. 2 and 3 prolong the line behind him in a straight line from the strain in similar attitudes. Firm foot-hold of course is essential. Sometimes, if a cliff be peculiarly dangerous, it is very useful for the captain to post himself at the very edge, whence he can either see or hear the signals of the man down the cliff.

This course is especially useful when a cliff is so shelving near the brink as to make it unsafe or impossible for the lowering party to obtain secure positions anywhere near it. The captain in this case should be himself in a bowline and when he has settled himself on the very edge of the cliff, his rope should be securely made fast to a rock.

As a matter of fact it is unusual to find a cliff either in a lime-

stone or sandstone country where a rope cannot be thus secured; if not to a rock, then to some tough tree or bush. When no such place can be found, the rope should be passed round the waist of the biggest and heaviest man of the party, who should ensconce himself in rear of the rest in a billet whence he cannot be ousted by a sudden jerk. I have adopted this plan with excellent results when working over very high cliffs. All shouting and hailing should be avoided on the part of the man down the rope. I always carry an "Acme" dog whistle on a short lanyard round my neck. One blast signifies "Hold hard." Two blasts: "Lower away." Three blasts: "Haul up." Where there is reason to apprehend any complications, the whistle should be carried in the mouth. It is easy then, if in sudden trouble, to give one blast and cause the party above to hold hard.

It is marvellous how clearly a whistle can be heard when the human voice some little way down a cliff is utterly unintelligible to those above. Nothing is so demoralizing to a lowering party as to hear a man far out of sight shouting inarticulately; in such cases it may make all the difference in the world whether they chance to do the right thing and at the right moment.

The climber, having been lowered over the cliff until he arrives at the nest or at a cavern or ledge which conducts to it, may find it necessary to move laterally along the face of the cliff for some yards. If the local conditions permit, the safest course is for him to give the signal "Lower away" and, after hauling in all the slack he may require, signal "Hold hard" and coil down the spare rope. He then crawls along to the point which he wishes to reach.

But sometimes there may be a very extensive terrace or portion of the cliff climbable without a rope from his point of vantage. In such a case the safest course is to unbend the rope and make it fast to some bush or crag and then proceed to

explore the cliff. Having finished this he returns to the point whence he started, bends on the rope again, and holding firmly on to the cliff, signals "Haul up." It is always best, as soon as the slack has been taken in, to signal "Hold hard" before making the final ascent. This gives time to the party above to get a fair strain on the rope and enables the man below to make a comfortable exit from his ledge. Disregard for this small rule has resulted in my being jerked off swinging in mid-air by over-anxious friends above, an event as alarming for them as it was unpleasant for me.

In ascending, a skilful climber will soon pick up the rhythm of the haulers and whenever the cliff permits, will, by catching hold of it with his hands, "lighten up" his weight. It is marvellous how even a couple of fingers on a ledge at the right moment will ease the efforts of those above in hauling up.

During an ascent of this description a climber should *never* "get ahead of his rope"; in other words, he should always keep a strain on it. A rope attached to a man which is allowed to sag down may very easily catch on some projecting rock just below him and when the men above give the next pull he may find himself being violently hauled downwards, a most unpleasant predicament.

I cannot too emphatically caution all would-be climbers as to the possible dangers of meddling with the ropes unless they are skilful at knots. Even the most practised and expert hands may get into trouble by this means, for long familiarity with danger makes all men at times careless. I will cite but one example. In 1894 I descended the big cliff known as the Laja del Ciscar. I had with me 180 ft. of new Alpine 1¼ in. rope and was lowered by two Spaniards. It was by no means a sheer descent, save now and again for 20 ft. or so, where a vertical fissure ran down to a ledge which in turn sloped outwards until it merged in the general surface of the cliff. When near the end of the

rope I noted to my chagrin a Vulture's nest only 20 ft. below me, so re-ascending a few feet to a point where I could get a secure foot-hold, I unbent the Alpine rope from my sling, joined on my silk rope, attaching the latter to my sling, and was lowered to the ledge. I took a photograph of the Griffon's nest and egg (which subsequently appeared, by the way, in Colonel Irby's

THE LAJA DEL CISCAR.
(*Summit 620 ft. above stream at base.*)

second edition) and then signalled to be hauled up. It was more of a scramble than a regular ascent, but after going up 20 or 30 ft. I bethought me that it would be wiser to recover touch with the Alpine rope, so I unbent the silk rope and attached the Alpine rope once more to my sling by two half-hitches, well hardened down.

During the ascent I stopped several times to explore some other nesting sites, the rope hanging slack. Finally I signalled

ON THE FACE OF THE LAJA DEL CISCAR.

"Haul up," and started upwards. It was whilst I was being dragged up one of the steep slippery gullies with my whole weight on the rope that my eye chanced to fall on the knot which

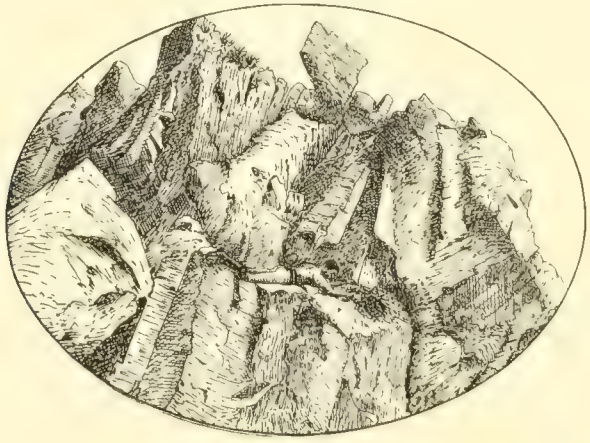
secured the rope to the sling. This was about on the level of my middle waistcoat button. I had started as already described, with two half-hitches and a foot of rope to spare, and, as my eye caught the knot, I realized that one of the half-hitches was gone and that the other was slowly drawing and lacked only a few inches to run clear! I quickly grasped the rope above me with one hand and somehow got hand-hold on the next ledge above, but only just before the knot drew! It was a frightful experience and due to sheer carelessness, for I had not taken into account the "curl" in the new rope when it was hanging slack nor the effect of the hot sun upon it. Eventually I got more rope eased down, and after making a secure knot this time was hauled up.

It all happened long ago but I can still recall my sensations when, as I steadied myself on the friendly ledge, I glanced down that steep slope to the foot of the cliff. The moral of the tale is that no trust should ever be placed in two half hitches, especially in the case of a new rope, unless the free end be seized on to the standing part.

No account of the ropes I employ would be complete without a description of my silk rope, already incidentally referred to, which has been my constant companion for nigh thirty years. This is one of those carried by Tyrolean sportsmen and is my most cherished memento of the happy birdsnesting days I spent with Crown Prince Rudolf of Austria in the spring of 1879. The Prince wore—as did his chief companion, Count Hans Wilczek (a famous sportsman) -the Tyrolean Jäger costume, and both invariably carried these silk ropes in their rücksacs. It was after a particularly nasty climb up an awkward fir tree to get the nest of the Black Kite that The Prince insisted on my having one of the silk ropes they carried to use as an aid in any such emergencies in the future. This rope is of strong plaited raw silk over 20 ft. in length with a loop at either end, well spliced and served. It is almost exactly

1 in. in girth and weighs less than ½ lb. It can be carried in the pocket and occupies little more space than does a bandana handkerchief. As regards strength, I have now and again made it fast to a bough and two men weighing over 20 stone between them have sat in the bight, swing-fashion. Both when working out along the slippery branch of some lofty tree or when sidling along some narrow ledge on a precipice have I used it on countless occasions as a life-line.

Since I have taken to photography it has often given me the only means of securing myself when endeavouring to work the camera with effect in some dangerous situation. Its lightness and compactness have also frequently made me carry it when no climbing was imminent and it has in turn performed an endless succession of duties, of which slinging Great Bustard across a saddle, picketing a horse and towing a duck-punt are but a few chance examples. One winter I made a pioneer skating trip for over 20 miles along the Hythe canal whilst the ice was yet thin and reputed to be unsafe. Luckily I accomplished my task without going through but the rope in my pocket gave me no little confidence. From time to time allusion will be made to this famous rope in describing various birdsnesting adventures where it has stood me in good stead.



WHITE STORK.

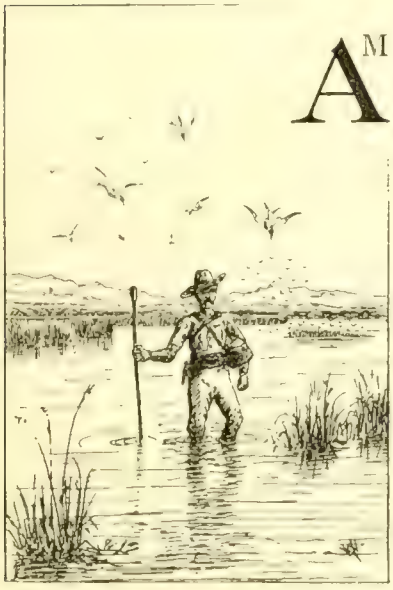
Ciconia alba (Bechst).

II.—*IN A SPANISH LAGUNA.*

CHAPTER I.

A DAY IN A LAGUNA.

The lagunas of southern Spain—Dense growth of bulrush and reeds—Some unpleasant residents—Herds of swine and their work—Storks—Buff-backed Egrets and their occupation—Water tortoises and snakes—Purple Herons—Marsh Harriers—Undesirable neighbours—Wading through the water channels—Purple Gallinules—Bitterns—Great Reed Warblers—Whiskered Terns—A floating lake dwelling—Bulls and other cattle in the marshes.



AMID the marshes of southern Spain a great variety of birds find suitable nesting-places. The size and exact locality of these swamps vary from year to year and depend upon the amount and time of the rainfall during the winter months. But there are certain low-lying portions which usually remain flooded for months after the shallows around have become expanses of sun-baked mud. There are places of this description near my dwelling and since the quest of nests in such spots is unlike birds nesting in any of its more normal phases, I shall give an account of one here.

To begin with, such places usually have a fairly hard and level

bottom, and can, as a rule, be traversed with all reasonable security. Between the months of April and June they are densely overgrown with enormously strong and tall bulrush (*Scirpus lacustris*) (not the great reed-mace [*Typha latifolia*], by the way, which is popularly thus styled), which make all movement through them a continuous struggle. I have taken various enthusiastic birds-nesters to such places, among them my indefatigable comrade, Admiral Arthur Farquhar, and have seen one and all of them eventually reduced to a condition of complete exhaustion. Should a fresh breeze be blowing, the big reeds get a "lie" which makes it almost impossible to force one's way through them "against the grain" so to speak, and the explorer is compelled to alter his course and be content to drift with the line of least resistance through the bigger patches until, upon emerging on open water he can work his way up to windward and thus to some extent recover his lost direction. Wandering thus, perhaps up to your waist in water and with the feathery rushes waving high above your head, it is often difficult to keep your bearings. In theory, the direction of the wind and position of the sun should be sufficient guides, but in practice it often happens that it is no easy matter to work your way out of the sea of reeds and rushes which encircle you. After one or two such experiences, including being caught in a heavy rainstorm which for a time made observations impossible and obliterated all landmarks, I took care to put a compass in my pocket before diving into the reeds.

Such localities ever abound with leeches and nobody who does not require extensive blood-letting should enter them without taking precautions as to his dress. Stockinged legs are of course about the worst thing possible. But besides the leeches there is a mysterious and to me unknown water-beast—I call it such for want of a more definite name, but whether it be reptile or insect I cannot say—which inflicts a most serious bite or sting. The immediate effect

is to raise a very painful swelling, the skin assuming the colour of a ripe raspberry for some inches around the wound—the pain lasting usually for twenty-four hours. I have known men standing in the laguna after sundown in the month of December, waiting for duck, to be bitten by this mysterious thing and I mention its existence as an additional warning to those who may wade in Spanish marshes to take the precaution to wear protective clothing.

To me the most trying part of these lagunas is the impossibility of resting from time to time. Now and again some more solidly constructed nest of Heron or Harrier may offer a temporary seat, but it is usually only a question of time before your weight causes the nest to sink below the water.

But in saying that the bottom of these lagunas is level, I omitted one rather important proviso. It is true there are many hundreds of acres which are as level as a well-made polo-ground, but there are again many hundreds more where the vast herds of pigs which find subsistence in this region have been at work digging for tubers. During the months of the year that the plains are either moist or submerged a strong growth of reeds, the *Cyperus longus*, (known to the Spaniards as *castañuelas* from *castaño* a chestnut), having round tuberous roots, covers certain portions of the plain and the systematic way in which the pigs convert such spots into a series of shallow craters separated by low banks is surprising. So long as these excavations can be seen they are of no great account, although tiring to walk across. But when covered by a few inches of muddy water they are intensely exasperating and vastly increase the chances of a fall, since all your calculations are thrown out by suddenly finding one leg is either 6 in. longer or shorter, as the case may be, than it may reasonably be assumed to be. A stumble and fall under such conditions, even in the shallows, is a most unpleasant affair. For this reason I invariably carry a long iron-spiked herdsman's stick when on such expeditions.

It would be beyond the scope of this chapter to mention all the birds seen during a day's work in the marshes and I shall restrict myself to describing some of those which are most noticeable. As you approach the lower portions of the plain near the laguna, White Storks (*Ciconia alba*) are to be seen busily engaged in their search for frogs and other reptiles as well as for beetles. These birds of course do not nest in the marsh but they form so conspicuous a portion of its bird-life that they cannot be left out. Although many resort to the big towns to nest, others build in trees or on the tops of the small reed-built cottages or *chosas* of the herdsmen. I saw such a nest only this year on the summit of a small stack of straw close to a large *cortijo* or farm-house. The old birds had taken extraordinary pains to twist and turn the first big sticks they brought so as to weave them securely into the binding withes of the straw stack and thus assure themselves of a sound foundation upon which to rear the usual big platform of sticks. Another marsh-frequenting bird is the handsome Buff-backed Egret (*Ardeola russata*), which are in constant attendance on the herds of cattle which pass so much of their time amid the rich pastures around the lagunas. These birds stalk gravely around the beasts or perch on their backs seeking their favourite food, the parasites which infest all animal life in warm countries. The local name for these birds is *Purga bueyes*, or "cattle cleansers," derived from this habit.

Leaving the muddy shore, you splash along through the shallows amid a scattered growth of reeds and water-plants. As the water deepens and the reeds grow denser, many Coots' nests, some with six or seven eggs, are to be seen. On a hot day every nest not in occupation by the Coots is usually tenanted by two or three water tortoises (*Clemmys leprosa*) which invariably scuttle overboard as one approaches. These reptiles literally swarm in the rivers and lagunas of southern Spain and are one of the many foes of the

sportsman who may lose a wounded duck overnight. Both they and a huge water-beetle (*Dytiscus*) make short work of anything they have a mind to devour.

As you work your way forward towards the big reed-beds from time to time, Mallard and, more seldom, Wild Duck spring from the reeds, but this is no place to look for their nests which are hidden amid the standing corn or asphodel-covered hill-sides miles away. I have often come upon Wild Ducks' nests when riding across the hills in quest of Bustards and it is ever a marvel how they manage to conduct their tiny atoms of newly hatched ducklings across the long stretch of hard dry ground alive with vermin of all sorts, both four-footed and winged, besides predaceous snakes and lizards, to the desired sanctuary of some reed-grown laguna. Few friendly streams lead to the marshes below, for in Spain in the spring months most of the smaller streams are either dry or merely a succession of pools with steep vertical sides, ill-adapted as channels of communication for such puny birds. The Spaniards aver that the Wild Duck carries her young from the far distant nests to the laguna on her back.

Now and again you come upon masses of decaying reeds above the general surface of the water, and here you see many snakes basking in the sun, sometimes a dozen together. These are the Viperine Grass Snake (*Tropidonotus viperinus*) and are well named, for although harmless, like the Common Grass Snake, in size, build, flatness and breadth of head and zig zag markings down the back, they bear a remarkable superficial resemblance to the poisonous Viper (*Vipera latasti*).

Gradually the water deepens and the reed beds become denser and taller until you arrive at the great tract of bulrush which forms the sanctuary for so many birds. Considering the number of Purple Herons (*Ardea purpurea*) which nest in these marshes it is curious how little one sees of them and how easy it is to miss

their nests. As in most kinds of birdsnesting, I have found it far better to go to some commanding point whence I could watch a marsh with my glasses from a distance and thus decide upon the best part to search for Herons' nests than to tramp aimlessly through it on the off-chance of finding some. The essence of success in all such operations lies of course in keeping to the required direction when one leaves the higher ground and enters the big reeds. Marsh Harriers (*Circus æruginosus*) abound in such places and as you work through the reeds they frequently rise from some temporary resting-place amid the beaten-down rushes. Owing to the cover from view given by the high reeds these handsome birds often pass close by; the creamy white of their beautifully marked heads and the delicate tints of their ash-coloured shoulders, wings and tails, when thus flying in the sunlight, can hardly be imagined, certainly not realized, from a stuffed specimen in a museum. One day I saw one of these birds make a sudden stoop and disappear among the sparsely growing reeds within 40 yards of me. As there were at least 2 ft. of water and the reeds were not at all thick, I was considerably puzzled by the manœuvre and proceeded quickly towards the spot, only to find it had alighted in a Coot's nest with eggs which the rightful proprietor had left owing to my near approach. No harm was done and, the Harrier having departed the Coot as quickly retook possession. From this it is tolerably evident that the Coots can protect their eggs so long as they do not leave their nests. No doubt the Harrier, upon seeing the Coot depart, thought the opportunity too good to be missed and thus came within easy range of me and in fact did not leave until I was close to the nest.

Purple Herons sit very close and often spring from the nest within a few yards of the intruder. The nests are simply collections of dead bulrush, the base being usually formed of last year's growth, brown and withered, still standing as it grew but bent and beaten

down, upon which a mass of rushes brought in from around forms a superstructure. The cup or depression is usually lined with dried reeds and is raised from 12 to 30 in. above water-level. The eggs

NEST OF PURPLE HERON.

are from three to five in number and of the well-known delicate pale blue of the Common Heron's. Once I found a nest with seven eggs in it, but probably this was a joint-stock establishment. Frequently nests will be found with only one or two hard-set eggs.

In such cases I have good reason to believe the Marsh Harriers have devoured the others. More than once when I have put a Purple Heron off its nest I have seen a Marsh Harrier dash down and commence to eat the eggs, and I have sometimes disturbed one of these robbers in the act.

On 26 April 1903 I found a number of Heron's nests containing from one to four eggs all hard set (I tested them in the water to find this out) and all stained with blood, showing that the Harriers

EGGS OF PURPLE HERON.
(Size 2·4 in. × 1·7 in.)

had been at work among them. The Harriers seem to take toll of the first eggs laid, for curiously enough in another year I visited on 13 May a number of nests in the same marsh all of which (save one with five) contained perfectly fresh eggs. The Harriers frequently lay their eggs in the Herons' nests and must surely be most undesirable neighbours.

At places in these lagunas there are extensive pools of open water and again narrow and sinuous channels which always look

peculiarly deep and dangerous but are seldom so. It is a curious sensation wading alone along these water-lanes with the high rushes cutting off one's view of the land on all sides. Sometimes, when moving quietly in such a spot, I have heard Bitterns calling in the dense reeds close by or been startled by the curious cry of the big Purple Gallinule (*Porphyrio caeruleus*). These beautifully coloured but ungainly birds at times rise at your feet and, flapping away for a few yards, subside into the reeds again. Once I came round a corner almost face to face with a Great Crested Grebe. The fine Great Reed Warbler (*Acrocephalus turdoides*), which builds a most artistic nest suspended amid the bulrush, breeds in this marsh and its powerful song can be often heard at close quarters.

In the more open parts of the laguna, away from the high reeds and where the whole surface of the water is whitened by the flowering ranunculus, the Whiskered Terns (*Hydrochelidon hybrida*) construct their floating nests of loosely knitted green reeds. Some of these flimsy platforms are held by their surroundings and are thus lightly moored, but others again are attached to nothing and drift with the wind. Thus one year in May I came upon several score of nests scattered about among the young reeds and upon revisiting the place a few days later found that the majority of them had been blown by the wind to the lee side of the laguna, where they were packed in a dense mass. Three is the usual complement of eggs laid, of a delicate green ground-colour, richly blotched and spotted with black and brown. The old birds are singularly beautiful on the wing, their dark breasts appearing in the brilliant sunlight to be quite black and contrasting with their silvery grey backs and wings. So long as you are in the neighbourhood of one of their lake-dwellings they keep up a great commotion and indulge in vociferous cries. Now and again a villainous Marsh Harrier intent on egg-stealing comes flapping and skimming along near the Terns'

sanctuary, upon which the gallant little birds make up a party to mob and harass the big intruder, dipping and striking at him from above until he makes off.

As already mentioned, when wading about in these lagunas I carry a long stick such as all cattle-herds use in Spain. It enables me to plumb the depths, and saves many a fall either from the uneven bottom or when the reeds and water-plants get around my feet. When carrying photographic apparatus, a fall in 3 ft. of water may spell untold disaster.

Very often when working about these marshes you come right upon bulls or cows which have betaken themselves to the reed-beds to avoid the flies and heat of the day. On such occasions a good bull-stick affords at least some moral support and one which has at times extricated me from awkward situations. What would be its precise effect on a bull which meant to be disagreeable I cannot say and I hope never to test. I once asked a famous old bull-herd whether in such an untoward case, I could not with my steel-pointed *garrocha* intimidate the brute. He replied, drily, "Ya vendrá mas pronto," "He'd only come at you all the quicker"; not very encouraging to the amateur bull-fighter!

$\frac{1}{4}$

MARSH HARRIER.

Circus aeruginosus (Linn.)

CHAPTER II.

THE HARRIERS.

Marsh Harriers—The most indefatigable of hunters—A constant trial to the sportsman—Semi-aquatic habits—Beautiful adult plumage—Montagu's Harrier—Hen Harrier—Pale-chested Harrier—Marsh Harriers' deep engrossment in search of quarry—Their boldness and strength—Quickness of vision—Relative quickness of vision in birds—The small Gulls apparently the quickest—Colonies of Harriers—Young Harriers in nest—Their pugnacity—An unlucky day's birdsnesting.

THIS beautiful family is well represented in southern Spain. The Marsh Harrier (*Circus æruginosus*) is especially abundant and is to be found in great numbers in all the low-lying and marshy districts. Throughout the year and in all weathers, from earliest dawn to the lingering light after sundown, they are to be seen patiently quartering the reed beds and swampy portions of the plain in quest of anything that may turn up, for nothing seems to come amiss to them. They are particularly fond of the fresh-water tortoises which abound in such localities; they are also famous egg-stealers and in the spring months, as already described, exact a heavy tribute from the nests of the Purple Herons and Coots.

To the sportsman they are an ever-present trial, for they are constantly on the look-out for wounded wild-fowl or Snipe and they have a knack of suddenly appearing from nowhere and annexing a wounded bird within sight but beyond shot of the gunner. Any bird not immediately picked up by the shooter is sure to be devoured by these diligent searchers. The rapidity with which they do this is both surprising and annoying. Not long ago I dropped a Wigeon dead on the top of a grassy bank about 50 yards across a river; not having my retriever with me I walked down to a ford not half a mile off and crossing, returned along the opposite bank to pick up the bird. But in the brief interval a Harrier had been down and had eaten the best part of the Wigeon's breast! It may be taken as a rule that any duck shot at evening flight which are not picked up at the time will be found by the Harriers at dawn and devoured. Now and again, if a goose or duck chances to fall on its breast amid the reeds, it may perhaps escape notice for a few hours, but the sportsman who has failed to pick up his birds overnight will in most cases find them picked clean when he reaches the spot next day. What between the prowling foxes which carry off any wounded birds that may reach the shore and the water tortoises, which devour those which may fall into the dense reed-beds, the chances of recovering wild-fowl lost over-night are indeed small.

I do not know any bird of prey which is so thoroughly at home among the waters of the big lagunas as the Marsh Harrier; many pairs may be described as being semi-aquatic in their habits. During the winter months from my shooting punt I see them habitually resting and roosting in the clumps of dead reeds a mile or more from the foreshore, whilst in the spring they invariably nest in the dense beds of bulrush or reeds, which at this time of the year are usually 8 ft. to 9 ft. in height. Most commonly they seize upon the nest of some luckless Purple Heron, adding insult to injury by first eating the big blue eggs of that bird.

The changes of plumage which all the Harriers undergo, and especially the Marsh Harriers, are marvellous and not a little perplexing. The difference between the sexes too, as is well known, is very remarkable. An adult male Marsh Harrier with

NEST OF MARSH HARRIER.

its ash-coloured markings on wings, shoulders and tail is very beautiful. The adult female is quite a different-looking bird, rich chocolate brown in colour with a pale yellow crown; so very pale at times as to appear quite white. This is the plumage figured in the plate.

Next in point of numbers to the Marsh Harriers is Montagu's Harrier (*C. cineraceus*), a species not always easy to tell on the wing from the Hen Harrier (*C. cyaneus*), the best-known English species, and the Pale-chested Harrier (*C. macrurus*). In all these three the adult males are of a delicate slate grey with black tips to their wings, whilst the females are generally brown in appearance. Montagu's Harrier, whilst at times nesting in marshes, also resorts to heaths and dry localities. Colonel Irby found a colony of over twenty pairs breeding in a marsh in Morocco.

Although I have constantly come across all these species, my daily companion at all times of the year when in the low-lying country is the Marsh Harrier. Watching them as I have, at all seasons and in all sorts of places, now when waiting for duck to flight or perchance in spring-time when watching some marsh-birds nesting or again when crouching low during a Bustard or Wild Goose drive, one marvels at their undefeated pertinacity and unceasing efforts to find their prey. That they are extremely quick-sighted is plain from their mode of life and methods of hunting. All the same, I have frequently outwitted them when I have been lying prone; then, while I remained perfectly motionless, they have sometimes been so engrossed in their minute inspection of what lies below as to pass within close shot. Their boldness is at times remarkable. In January 1907 I was lying up waiting for wild-fowl, concealed amid some matted scrub and herbage. I had killed a Grey-lag Goose and some duck and had set them up on forked sticks to act as decoys, close to the foreshore and within 30 yards of my position. Presently an adult male Marsh Harrier came beating up wind along the water's edge and upon spying the decoys made a dive at them, but apparently suspecting that something was wrong, alighted within a few feet of a Pintail drake. I was curious to see what he would do as I imagined he would hardly be able to lift so heavy a bird. Next moment the

Harrier ran at the defunct bird and literally jumping on its back, seized it and, taking wing, was about to make off, when, in order not to lose my duck, I shot him.

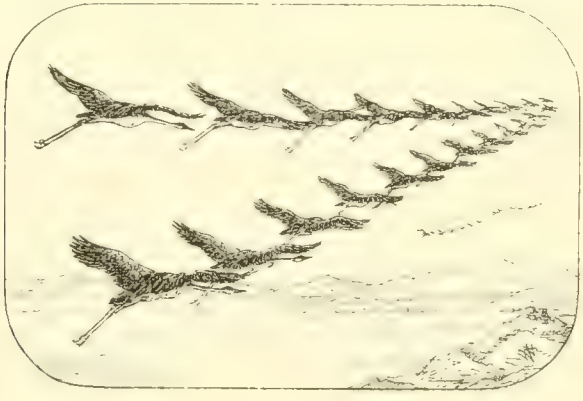
The comparative quickness of vision of the various orders of birds is interesting to study. My own conclusions are that none see quicker than the smaller species of Gulls, and after them the larger Gulls. The most wary of birds, such as the Great and Little Bustards, Curlew and various raptorial birds, have now and again all come past me within easy shot, when lying concealed. Not so the small Gulls, which ceaselessly drift up and down the waters of the lagunas in winter and which somehow always detect one's presence before coming within shot and swerve off.

In some of the large tracts of bulrush Marsh Harriers nest in colonies and even in small marshes it is no uncommon thing to find two or three nests within 20 to 40 yards of one another. As far as I can judge, they seem to prefer to occupy some other bird's nest to building one for themselves, but I know of several instances where they undoubtedly built their own nest. This once occurred close to my quarters, a pair of Harriers building their nest in the reeds not 10 yards from the bank of a reed-grown pool.

It is many years since I found my first nest of young Harriers, and it cost me dear. I was riding alone near a marsh, and seeing some Harriers enter a high patch of bulrush I dismounted and, picketing my horse, waded in. The water was 3 ft. deep and the reeds so dense that it was difficult to force one's way through them. Suddenly I came upon a nest with four young birds in the white-down stage with their primaries just budding. The instant they saw me they sprang up and showed fight, assuming various attitudes of defiance. It was a novel and interesting sight to see these little savages in their home amid the waters. Upon my attempting to pick up one of them to examine it closer, it struck out an abnormally long yellow leg armed with black needle-like

claws. In fact every time I tried to grab one of them I was met by similar tactics accompanied by fierce digs of their sharp little beaks. It was in truth difficult to find any spot left unguarded by the four beaks and thirty-two sharp claws of these little wretches. Owing to their weight, the nest had got flattened down and was more like a raft on the surface than anything else. In it was a half-eaten water-vole and the remains of some small snakes and frogs. I made a water-colour sketch of it, of which the picture here reproduced is a facsimile.

This was one of my unlucky days. True it is I got some Harrier's eggs (there was a second nest hard by with five eggs), also I made the acquaintance of young Marsh Harriers for the first time. Unfortunately during my absence in the marsh, my horse picked up some poisonous herb which caused its death within two days, a sad loss to me and one which seriously interfered with my ornithological work during the season of 1879.



COMMON CRANE.

Grus communis (Bechst).

CHAPTER III.

THE COMMON CRANE (*Grus communis*).

A conspicuous feature in the marshes—Flighting at sunset—Lack of caution after dark—Musical call—Vast migration in spring and autumn—Crane formations—Exact compass-course of migration—Decreasing numbers of nesting birds in Andalucia—In quest of the Crane's nest—Unwelcome intruders—Unseasonable destruction of birds—A second day's observations—Indecisive results—A third day—Protest by other bird-residents—The Cranes appear—Difficulties of "marking" in great reed-beds—Advance towards the birds—Cranes simulate disablement—Cranes' nests and Cranes' paths—Am baffled—The fourth day—Value of a cross-bearing—Find the nest with eggs—Photographing under difficulties—Retriever and Crane's nest—Young Cranes.

TO both the naturalist and the sportsman in the low-lying parts of southern Spain the most conspicuous of birds is the Common Crane and his note is the most familiar. Wherever large marshes are to be met with they are to be seen either in pairs or in small parties, walking through the reeds and rushes with the dignified slow step so characteristic of the family, ever and anon pausing to investigate some matter of interest in the shape of a luckless water insect or perchance a frog or other small reptile which may come within their purview. At other times they may be seen feeding

along the low hillsides bordering on the marshland, where they seem to find many beetles and other morsels to reward their researches. But they are by no means wholly insectivorous, and are at times somewhat destructive of the newly sown corn and, later, of the bean crops. These truly noble birds were once common in our fenlands but have long since disappeared, their title in many parts of the British Isles being now conferred on the Common Heron, a bird which, although large in the eyes of Englishmen, is considerably less than half the size of the rightful owner of the name.

During the winter months considerable flocks of Cranes congregate in favourable regions in southern Spain, and it is no uncommon sight to see parties of fifty or more flighting of an evening to the marshes to feed. By day they are ever on the alert and hence, happily, are rarely shot; but after a nightfall no bird is so confiding and all who have waited for duck after sundown in these parts can testify how on such occasions, provided the gunner remains still, these great birds will placidly fly within 25 yards of him, their curious creaking cry having well advertised their approach some minutes before they come in sight. In such circumstances nothing could save them from extermination save the fact that their flesh is very coarse, and that few beyond the very poorest of the country folk care to eat it. It is indeed a sin to kill these magnificent birds; for magnificent they are as they stalk solemnly through the reeds, the brilliant sun of Andalucia illuminating the lustrous silver grey of their backs and the splendid black tertial plumes which deck their graceful forms. Their strangely melodious and far-reaching cry, so constantly heard by day, is also indissolubly connected with the wilder side of life in Spain and has given interest and pleasure to many who were ignorant whence it came. But besides these numerous winter visitors to Andalucia and a few summer residents, enormous numbers of Cranes pass in the autumn through Morocco

returning northwards along the same route in the month of March. The numbers that are sometimes seen on these occasions are well-nigh incredible. Colonel Irby and Dr. Stark, both most trustworthy observers, have recorded how on one occasion they reckoned that over 4,000 had in one day passed over the spot which I am about to describe. This was on 11 March 1874, and it is typical of the marvellous regularity of all birds when on migration that upon the same day in 1907, exactly thirty-three years later, the passage of the Cranes northward was once again at its maximum at the same place. The well-known V-shaped formation in which they usually fly varies in composition from a few individuals to fourscore or more on either side. At times they drop the V formation and move in long undulating "skeins."

The direction taken by the successive flocks (as well as of that of the Storks, which pass northwards in flocks, at times numbering from 400 to 500 each, but some weeks earlier than the Cranes), in accordance with the observations made by me for many years in the same district, is almost invariably the same, namely a line which when plotted on the map passes about 6 miles west of the old town of Tarifa and runs from S. by E. ½ E. to N. by W. ½ W.

From this region they seem to spread all over Europe, their nests having been obtained in the far north in 1853 by the naturalist Wolley, who, as is well known, was the first British ornithologist to find the nest; his delightful description of it amid the birch-grown bogs of Finland has given pleasure to very many. They have also an eastern stream of migration which I have myself witnessed in the Levant.

About thirty years ago, considerable numbers of Cranes remained to nest in south-west Andalucia; but constant egging by professional "collectors" has sadly reduced their numbers. In some districts they have ceased to nest altogether while in others where I can recall seeing over thirty pairs in the nesting season

there are now hardly half a dozen to be found during the summer months. In such circumstances it becomes almost a crime to rob their nests.

In 1906 I was especially keen to find once again a Crane's nest, as I was anxious to obtain photographs of the nest and eggs for the purposes of this book.

The very difficulties of the whole operation as I knew well from past experiences gave additional zest to the undertaking. The region where some few Cranes still nest comprises many square miles of marshland covered with luxuriant reed-beds, and owing to distances, topographical obstacles and the lack of accommodation this district is decidedly difficult to reach and to explore thoroughly. The whole of the lower lying lands are submerged by the winter floods, and as these dry off vast areas remain which in some years are still under water until the summer. It is due to this variety of levels that the reeds in some places attain to a great height, in others owing to the water draining off earlier in the spring, are only 4 ft. or 5 ft. high and in others for the same reason again still less. The particular ground selected by the Cranes is usually where there is water from 9 in. to 18 in. in depth, and where the reeds are not too high to prevent these wary birds when they stand up on the nest from seeing the approach of anybody through or over the tops of the reeds. How vast and apparently interminable are these reed-beds can best be realized by those who have set themselves the task of traversing them. At places they are so luxuriant and strong in growth that it requires considerable exertion to force one's way along even for a few yards at a time.

It was on one of the early days of May that I rode out to a part of the marshes where I had noticed several pairs of Cranes on more than one occasion during the previous month. This portion satisfied the conditions I have described as a breeding-spot for the Crane, and, further, was of reasonable size, extending for over

2 miles from north to south and rather less from east to west, in all some 2,500 acres, without a bush or stone or any other landmark in its whole extent, and for this reason admirably adapted for a nesting-place. Arrived at my destination, I hobbled my horse in a grove of wild olives and lay down on a low hill, about 15 ft. above the level of the marsh and proceeded to examine the ground before me with my field-glasses, but was not a little vexed to see the heads of two men above the reeds about a mile distant. Their unwelcome presence of course made all bird-watching, for the time at least, a farce, so I determined to go and find out what they were in quest of, horrid visions of the bestial "paid collector" and his most accursed myrmidon the local sportsman passing through my mind as I did so. Upon the two men detecting my advance and imagining no doubt that I was a *guarda* of sorts, they separated and made off in different directions. A man on foot however has no chance against a Spanish horse bred in the marismas which is semi-aquatic in its habits, and despite deep mud, clinging reeds and much water it took but a short time to ride down one of them. He turned out to be a man well known to me from a village about 8 miles distant. He was carrying a gun and hence his anxiety to avoid interviewing an apparent stranger. He assured me he was merely egging and produced from a sack a number of Coots' eggs in proof of his statement; for all eggs, including those of the Great and Little Bustards, Cranes, Stone Curlews, Wild Ducks, Herons or Terns, are eaten indiscriminately by the folk about here. Upon being pressed, he extricated from the sack several Wild Ducks which he had shot swimming about with their young broods, also some Coots and Whiskered Terns; It was of course useless to point out the enormity of his offence; he regretfully told me he had failed to find any Cranes' eggs which he assured me were very *gordo* and excellent to eat, for how was a poor man on foot to see over the

accursed reeds? If he only had a horse all would be well, for then he could see what he was about.

Two days later, I paid a second visit to the Cranes' stronghold, but this time selected another point about two miles from my first station and to the east of the marsh, the former being on the south side of it. A careful reconnaissance of the great sea of waving reeds shortly disclosed to me two pairs of Cranes, whose movements I watched most carefully for nigh two hours without being able to form any opinion as to their meaning beyond that one pair had apparently some definite object in view whilst the other seemed to be quite irrational in their methods and movements.

I was unable to revisit the place for some days and then went to the olive grove whence I had commenced operations on the first day. For a long time no Cranes were visible, but other bird life was to be seen in abundance. Immediately in front of me, and between my position and the edge of the marsh was a sun-baked expanse of dried mud over which a colony of Pratincoles (*Glareola torquata*) kept wheeling, ever and again coming up to mob me in protest of my invasion of their sanctuary. In the shallows along the edge of the water some Squacco Herons (*Ardea ralloides*) in their glorious nuptial plumage were wading, whilst beyond them the graceful Whiskered Terns eddied up and down. The incessant querulous cries of the Pratincoles and the sharp call of the Terns intermingled in an amazing confusion of sound but its meaning was perfectly clear: Would I and my horse and retriever kindly go somewhere—anywhere—but at any rate go away, at once or sooner if possible? After a long wait, two Cranes arrived from the north and alighted in the marsh nearly a mile and a half to my front. After much manœuvring and changes of position they proceeded to walk through the reeds southward. Presently one disappeared the other halting and posting itself on sentry duty. It was not difficult to come to the

conclusion that these birds must have a nest and that the eggs must be but slightly incubated or they would not have been absent for so long.

After taking a most careful bearing of the spot where the bird had become lost to view, not only on a grey stone nigh two miles off on the far side of the marsh but on a rocky patch in the sierra twenty miles beyond, I mounted my horse and proceeded to ride the line. Upon descending into the marsh and entering the reed-beds, I at once lost sight of my guiding stone ahead. Luckily, the mark in the sierra stood me in good stead and enabled me to keep to my alignment. And here I must digress for a moment to explain a technical point of no small import in this matter of "marking." When a sportsman or naturalist marks the position of a bird or other object, the first and principal thing of course is to ensure that not only is a correct alignment taken from the point of observation but that this alignment is carefully adhered to during the subsequent advance towards the desired point. But this is only half the battle and provides for direction only, the other essential factor for a correct solution of the problem being that of the distance to be traversed to reach the objective. This in the case of the sportsman is usually 30 to 50 yards or at most, with a wounded and dropping bird, 100 or 200 yards and at these short distances it is usually easy enough to identify some tuft of rushes, bush or what-not. But in the case of the Cranes the problem of distances was infinitely more complex. To begin with, the distance was very great, so great that save with a telescope it was impossible to see the birds at all, since only their heads showed above the reeds, or to attempt to identify the point they were at. Added to this, the vast extent of reeds presented to the eye a sea of grey green, ever changing in colour and shade according as the sunlight played upon its wind-swept undulating surface. No matter how carefully one may

have noted any particular portions of such an expanse through one's telescope, the moment one lowers the glass and tries to pick up the same point by direct vision, the chances are twenty to one that the eye becomes hopelessly confused and the result is failure. Here however, fortune unexpectedly favoured me, for scattered at intervals throughout the great marsh were small belts of young bulrush, forming to the eye bands of slightly darker green. By such adventitious aid I was enabled to locate approximately the desired spot as being somewhat to the left of the fourth or fifth patch of dark rushes. So far, so good. But the moment I descended from my hill and entered the marsh the apparent position of these dark patches underwent a complete change and they seemed all to merge into one mass, and I had to trust to a dead reckoning of my course, somewhat aided by the dark rushes, but also somewhat complicated by them, for on entering the reeds I found bulrush growing sparsely all over the place. As I neared the spot I had marked, both Cranes suddenly rose from points wide apart and after flying about a quarter of a mile alighted together and watched my proceedings. As I was curious to see what they would do if I approached them, I marked the spot where I suspected the nest to be by planting my long iron-shod *garrocha* in the mud and rode towards them. And now I was witness of a spectacle for which I was not prepared. First one and then the other of the great birds gave me a gratuitous exhibition of what it was like to be a wounded Crane. No Lapwing ever did the trick with such adroitness. It seemed almost discourteous to disoblige them by ignoring their efforts, and I spurred my horse on as if to overtake them.

It was quite touching to note the desperate earnestness with which they suddenly acquired a broken leg or a stiff joint and tumbled over (much as a boy does who having attached a stilt on one leg, strives to walk), eventually having recourse to their wings

to recover their equilibrium. Again as I drew nearer, they would quickly develop some acute malady in one wing which caused them to flap along through the water and reeds until my nearer approach wrought a perfect cure and opening their grand wings, which spread for over 7 ft., they sailed off to a safe distance, ready to repeat the performance should I attempt to follow them.

I now returned to my bull-stick and picking up the old alignment worked along it until I came upon what was obviously an unfinished Crane's nest of the year, a great platform of reeds and rushes, 5 ft. across, raised to the level of the water which was here about 18 in. deep. Several well-defined "Cranes' paths" led up to this nest. It did not require any profound bird-knowledge to realize that this could not be the nest of the birds which had shown so much anxiety at my presence, and I quickly concluded that they must have eggs or possibly young not far off. Consequently I made numerous casts on horseback in various directions all about the place but without success and eventually returned to my point of observation thoroughly discomfited and trying to persuade myself that the Cranes had hatched off in the nest I had found, which had since subsided and that their young were skulking in the reeds.

After half an hour's further watching the Cranes once again returned to the suspected locality, whilst two other pairs conducted independent manœuvres about half a mile on either side of them. The most patient study of their movements however elicited nothing, and I was compelled to ride homewards at sundown with the feeling that I had been completely baffled.

The following day I once again returned to the attack and proceeded to the hill to the east of the marsh, since I was well assured of the accuracy of the alignment of the day before, and wanted to obtain as clearly defined a bearing from another point. Sure enough there were the Cranes feeding in an *arroyo*, or

watercourse about half a mile to the north of the point where they had given their acrobatic performance of the previous day. Presently they began to move south-westward and after a time one

NEST OF THE COMMON CRANE. (Photographed from the saddle.)

suddenly disappeared whilst the other took wing and alighted about a quarter of a mile beyond and at once took up a position on sentry duty. I felt convinced that the bird which had disappeared

had crouched in the reeds and run to its nest, and so allowing some yards for this evolution I took most precise bearings of the supposed spot and resolutely rode the line. After about three-quarters of a mile of splashing through the reeds and water, the old Crane rose some 40 yards right in front of me, and pressing forward I came on the nest some 20 yards nearer. Glancing around I found I was on the identical cross-bearing of the previous day. How and why I failed to find the nest on that occasion it is hard to say, for a short ride around brought me to the unfinished nest. It is a good example of the difficulties attending the finding of these huge nests despite years of practice, the aid of glasses and other resources of civilization.

There lay the nest in the middle of a small pond of open water, here only about 9 in. deep. It was merely a platform of reeds, 3 ft. 6 in. in diameter and raised 4 in. above the water-level. In a slight hollow in the middle of the platform lay two huge eggs of the usual type, very much elongated, and of a dull creamy brown colour with rusty spots and blotches and faint brown under-surface markings.

They lay some inches apart, pointing the same way and with the larger ends inclined outwards. Wolley has recorded how in a nest he found the eggs lay "with their longer diameters parallel, and there was just room for a third egg to be placed between them." It is just possible that the Crane arranges its eggs in this position in order to cover them more effectually during the process of incubation. Most people know very well the colour of the eggs of the Waterhen or Moorhen. These great eggs of the Crane have a strong resemblance to some of the commonly met with varieties of Moorhen's eggs.

Of course the chief difficulty in the matter of photographing the nest with the apparatus at my disposal (an ordinary hand camera) was caused by the surrounding mass of waving reeds,

NEST OF THE COMMON CRANE. (Photographer standing in water.)

which not only impeded the view but cast moving shadows across the eggs; hence it was necessary to dismount and clear a passage by bending down or cutting away the intervening reeds.

Then after mounting again, by reining my horse round and taking a snapshot, I was enabled to get a general view of the nest and vast expanse of reeds beyond.

In the first picture given the low line of hills in the middle distance surmounted by a few trees indicates the point of departure whence I made my final advance on the nest, the outline of the sierra beyond showing in the far distance. Having accomplished this, I again dismounted and endeavoured to take a picture at closer range; the perpetual movement of the reeds made this a troublesome matter, and being now much lower down naturally aggravated the difficulties. I was, however, so far successful as to be able to show the pool with the nest in the middle of it, my horizon being now limited by the masses of waving reeds.

Lastly, I detached my tripod stand from the saddle and, mounting my camera on it set to work to take photographs of the eggs at closer quarters. It was whilst thus engaged that the Crane's eggs had a narrow escape from destruction. So absorbed had I been in watching the movements of the birds and subsequently in riding their line and in photographing, that I had entirely forgotten the existence of my faithful retriever, "Sweep," who had not only followed me for hours across the marshes, but for a considerable time had been forcing his way through the dense reeds, often in water up to his shoulders, amid legions of leeches.

It was whilst looking into the finder of my camera that I suddenly became aware of a black object moving among the adjacent reeds and glancing up, I was horrified to see the dog scrambling into the big nest with the obvious determination of obtaining a drier billet! A frantic shout, "Drop!" caused the poor beast to recoil and drop on his haunches on the half-submerged portion of the nest where he sat shivering in the water in mute protest at my forgetfulness. The camera being directed on the

nest enabled me to place on record at one and the same time his obedience and my own selfishness.

Subsequently I took photographs of the eggs at 2 ft. and at 18 in. distance, but the size of the nest and the distance apart of the eggs did not lend themselves to such a process. During the

RETRIEVER IN CRANE'S NEST.

exposure, a peculiarly vicious insect of the horse-fly family, which had been pestering my horse for some time, alighted on one egg and so immortalized itself.

In conclusion, I may say that I subsequently located the other

Cranes' nests. One of them, belonging to the pair which had caused me such perplexity by their evasive and indeterminate movements upon my second visit to the marsh, had obviously been robbed, and it was their nest which I came across on the occasion of my third visit.

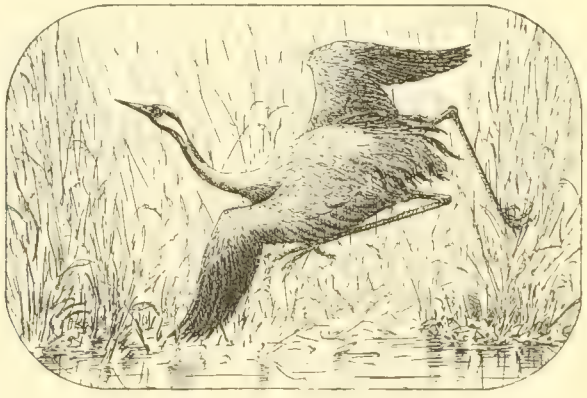
With regard to the third pair, unless their eggs were found and eaten by my friend the predaceous local sportsman, after my

EGGS OF COMMON CRANE (photographed at 18 in.), showing relative position of two eggs, with inclination of larger diameters. Size 4 in. × 2·5 in.

departure (when they must have been fairly hard set), I have every hope and belief that they hatched off in safety.

It is illustrative of the vicissitudes of the wandering naturalist in his researches that upon passing this locality the following year, I found that owing to the lack of rainfall in the early spring after an exceptionally dry winter the whole marsh was dry and that the Cranes had shifted their nesting place to another district. I had no wish to disturb them in their new quarters and so left them to carry out their domestic arrangements in peace.

I have never had the good fortune to find the young of the Crane. No doubt they are able to run very soon after being hatched out, at any rate I have never seen the young in the nest nor have I ever met with anybody who has. Wolley has described finding the young in Finland some distance from their nest; when he saw them they were much about the size one would expect newly hatched birds to be, judging from the size of the Crane's egg. Once and once only did I come across a Crane which unquestionably had young. I knew of a nest in a rather wet marsh where the reeds were unusually dense and high and rode out to try to see the young. The nest however was empty. As I circled round the place on the chance of coming across the young, one of the old birds actually rose within 5 ft. or 6 ft. of the horse of my *arriero* who was riding a few yards on my flank. I instantly went to the spot but despite the most protracted search could make nothing of it. Unfortunately, I had no retriever with me, else I feel confident I should have found the young. That they were skulking in the dense reeds and that we rode over them I have not the slightest doubt for not only did the old bird's behaviour in allowing us thus to come right upon her show that she had young but she subsequently settled close by and gave unmistakable signs by her anxiety that her young were not far off.



III.—*ACROSS THE PLAINS.*

CHAPTER I.

A RIDE ACROSS THE *VEGA*.

The plains or *vegas*—The rivers in winter and summer—The wealth of flowers—Spring-time on the *vega*—Herds of mares and cattle—The herdsmen—A "bad cow"—"Lagartijo"—Bulls—A *toro bravo*—A chase and an escape—Storks and Cranes—Little Ringed Plovers—Pratincoles—Stone Curlews—The Larks, Calandra, Crested and Short-toed—Fantail Warblers—Buff-backed Egrets—Ocellated Lizards and Grass Snakes—Hatred of retriever for these reptiles.

THE great alluvial plains of southern Spain are tenanted by many species of birds which are either resident throughout the year or migrate thither to nest. Certain lower portions of the plains are annually submerged during the winter months and then become the resort of thousands of wild geese and duck of many descriptions driven south by the stress of climate. As spring approaches, the wild-fowl start on their return journey northward and as the flood waters subside the Bustards and other normal occupants of the plains who have been temporarily driven to seek drier ground on the low undulating hills around, return to their accustomed haunts.

Here and there, some of the lowest-lying ground remains under water until the torrid heat of the August sun effectually dries it up; the dense reeds are then cut by the inhabitants for thatching their cottages or are exported to be made into bottle-casings.

These isolated pieces of water or *lagunas* so long as they last form sanctuaries, not alone for many water-birds but for numerous fish and reptiles.

A RIVER IN THE PLAINS: EVENING.

The plains are intersected by small rivers which, owing their supply as they do to the rainfall in the distant sierras, are usually full from the time of the autumnal rains until the spring. Every heavy rainstorm causes them to flood bank-high and not seldom to overflow. Since the waters when in flood are heavily charged with suspended matter, which quickly settles whenever the current is lessened, the effect of these continuous overflows is to make a deposit of silt and mud along the top of the river banks, which are by this means at places raised several feet higher than the

plains through which the rivers run. Generally the river banks are cut vertically, or nearly so, for some feet by the rapid current, but at the bends sand spits are formed which afford good resting-places for the wild-fowl in winter and likewise for various nesting birds in summer. The rivers are of considerable depth, some of the small ones even being from 8 to 10 ft. deep at many spots and with few fords. These are of course well known to all the *arrieros* or muleteers, since in the absence of bridges their condition from day to day regulates all movement along the country tracks. Rivers, streams and lagunas are alike full of barbel which grow to some size. As the waters recede and the streams dry up, the fish make for the lower reaches but these in turn become dry and towards the end of a hot summer most of the smaller rivers are reduced to a series of stagnant pools of putrid green water which are literally alive with barbel and water-tortoises. What becomes of these when the pools finally dry up is one of the mysteries of southern Spain. The natives are convinced that both fish and tortoises burrow into the damp soil and remain there until the autumn rains. Certain is it that there is never any falling off either in the numbers or size of the barbel and tortoises when they reappear in the autumn.

These great levels of slightly undulating grass-grown plains are known to the Spaniards as *vegas* and in the spring months their appearance is very beautiful. The higher portions, not liable to floods, are commonly covered with asphodel which often attains a height of 3 ft. to 4 ft. and at places the handsome dark-leaved Mediterranean squill rears its big blue tufted head. These and the White Iris blossom much earlier than do the majority of the plants.

To see the *vega* at its best, it should be visited in the month of May when the vivid green of the herbage is almost blotted out by the brilliancy of the masses of spring flowers. Nothing is more striking to the eye than the lavish manner in which

Nature applies her colours in such districts. Riding across the *vega*, at one time you may traverse acres of golden marigold, perhaps half a mile to the right the land is pink for hundreds of yards with a beautiful large madder or again, crimson with tre-foil, whilst to the left, maybe, it is as white as snow with waving camomile. As you leave the grasslands and traverse the lower spurs of the fallows, whole hillsides are covered with bright yellow mustard or big white daisies. Perhaps one of the most remarkable effects is that produced by the small blue, yellow and white convolvulus (*Convolvulus tricolor*) with which the ground is carpeted so closely as to make the hillsides at a short distance appear light cobalt blue. In addition to these great masses of colour the whole plain abounds with other flowers which astonish and delight the traveller. Large purple iris and the diminutive paler-coloured one abound as does the crimson gladiolus and a hundred other brilliant blossoms of all shades and colours.

Such is the country which it is my happy fate to traverse whenever I ride out from my dwelling of a spring morning. The plain is usually covered with herds of mares and cows with their calves and, at certain places, young bulls. Unfortunately of late years, vast numbers of pigs have been introduced and their unceasing digging for tuberous roots has gone far to spoil entire districts. The herdsmen in charge of the various animals remain out with them in all weathers, night and day and I number many old friends among them. Rarely it occurs that the men who thus guard the cattle are injured by one of them. Guarding semi-wild cattle is not altogether without its risks. As a rule, the cows are more dangerous than the young bulls and when a herdsman is damaged it is usually the act of a *vaca mala*, or "vicious cow." Only last year an old friend in charge of some mares was suddenly attacked from behind by a cow and badly tossed, alighting on his head. I was sent for to administer

"first aid," a rôle which constantly falls to me, and found the poor old man with a nasty wound in the thigh caused by a horn and with his head and face badly cut. Among these wild folk nobody has the slightest sympathy for a sufferer on such occasions — in fact, it is looked upon as a huge joke, and in this case the old man was instantly dubbed "*Lagartijo*," the pet name of a famous bull-fighter of the "seventies," by which cognomen he has been since known and his mishap is ever the source of much amusement. Nowadays, the bulls destined for the ring are no longer bred in this part of the country. Up to three and four years old the young bulls are comparatively harmless, all the same it is best not to venture among a herd, if on foot. But in every herd there are a few old bulls of six or seven years and these should always be avoided on principle, and in no case approached save on horseback.

To be chased by a bull on the open *vega* is a species of sport which does not appeal to me. Many years ago when with Harry Fergusson of my regiment we were crossing a plain, he on foot and I on horseback and we noticed an old black bull about a mile off watching us intently. At that time there were *toros bravos* or bulls of the fighting strain in the district and so we immediately altered our course and moved off, Fergusson walking beside my horse. Presently the bull began to follow us, at first at a walk and then at a trot. This was too much, so taking up Fergusson behind me, I made for the nearest shelter, the bull following us at a gallop. We were over a mile and a half from an old stone drinking trough on the side of a rocky hill and by the time we gained this point the bull was uncomfortably close behind us. In fact, he followed us to the foot of the hill and then, turning, trotted off. Our old Spanish attendant, Juan Palo, an inveterate wag, told us subsequently, in response to our inquiries as to why the bull had been so aggressive, that the *toros bravos* particularly disliked English

officers as they thought they might take their favourite cows away from them!

Riding across the *vega*, from time to time you see flocks of Great Bustard feeding on the rich young grasses or catching grasshoppers amid the thistles and herbage. White Storks are dotted about the plain and now and again a pair of Cranes may be seen among the waving reeds. Along the sandy banks in the river beds beautiful Lesser Ringed Plovers (*Egialitis curonica*) are running. These little birds after the manner of their family make no nest but lay their three small sand-coloured eggs, spotted with black, in a small cup-shaped depression in the sand. At places where the receding winter floods have left bare patches of dry mud, the Pratincoles are congregated, sitting motionless until your horse is almost upon them when they rise with shrill cries and mob the traveller, settling down again only a few yards off, as he passes on.

At rare intervals in these alluvial plains there are small outcrops of rock, generally of disintegrated sandstone. Here amid the loose scattered stones the Stone-Curlew (*Œdicnemus scolopax*) delight to nest, laying their two stone-coloured eggs, and hard indeed are they to find. It is rarely worth the trouble to look for their eggs unless the old birds are seen on at least two occasions at the same spot, when it may be assumed that they are nesting hard by.

The Grass Snake (*Tropidonotus natrix*) attains to great size in southern Spain; and on the *vega* I have often seen specimens 5 ft. to 6 ft. in length and of proportionate girth. Sometimes when I have dismounted in order to catch one of these larger reptiles they have shown fight and upon being approached have raised themselves up as if to strike, but their bite is of course harmless. Even more pugnacious are the Ocellated Lizards (*Lacerta ocellata*, which, when pursued and overtaken by a man either on horse or foot,

instantly come to bay and with jaws widely extended, showing a cavernous pink-lined mouth and throat, front the assailant and make a gallant spring at him as he closes on them. My retriever "Sweep," who, alas! succumbed this year, after four seasons of malarial attacks acquired in the *lagunas*, had a most intense hatred for these big lizards and when following my horse across the plain habitually chased and brought to bay those he came across. Having done so, he would bark at them until he saw a chance of closing on them when he would seize them and throw them high in the air and many a severe bite did he receive when thus employed. Often enough he would seize the unfortunate reptile by the tail with the usual result of its owner quickly parting with it and making good its escape. "Sweep," who had fallen behind my horse during this operation, would then gallop after me carrying the writhing tail of the reptile in his mouth in triumph, sometimes for long distances. Of snakes he had an equal hatred and killed many, often causing me no little anxiety.

Among the smaller birds which abound on the *vega* in spring is the handsome Calandra Lark (*Alauda calandra*), a fine bird with a conspicuous black gorget. Both these and the Common Bunting are very numerous. The pretty little Crested Lark (*Galerita cristata*) is also abundant, its sweet flute-like call being constantly heard. The smaller Short-toed Larks of both species, the ordinary (*A. brachydactyla*) and the Bætican (*A. bætica*), are also met with. The minute Fantail Warbler (*Cisticola cursitans*) is constantly to be seen and heard, its curious jerky flight and sharp staccato call making it easy to recognize. This little bird makes one of the most beautiful of nests of any of the European birds, pear-shaped, with a small entrance at the neck, woven of thistle-down and grassy fibres, and suspended, like a Reed Warbler's, between the stems of long grass or standing corn. The little eggs are either pure white or delicate blue speckled with rufous. It would

be easy to prolong this list indefinitely with the Pipits, Wagtails, and numerous other denizens of the *vega*.

High above the great plain in the blue zenith, the Vultures are to be seen circling, ever watchful for some defunct beast, and now and again the sharp bark of the Eagle is heard as he calls to his mate. Needless to say, the Harriers are ever with one, incessantly quartering the plain and at intervals dropping into the reeds in quest of prey and Kestrels are diligently seeking the insects which are in such profusion.

As you ride past the herds of mares and cattle, the White Egrets flutter off the backs of the beasts they are tending, whilst others stalk round the recumbent animals, from time to time making quick thrusts with their bright yellow bills at some tempting object. Big Ocellated lizards, as well as smaller green and brown ones, and snakes of all sizes which have been sunning themselves, make off at speed on our approach. The air is full of the hum of insects, and the liquid tinkle of a thousand *cencerros*, the big copper bells worn by mares and cattle alike, makes an harmonious accompaniment to the hundred and one sounds of the Andalucian spring-time.

$\frac{1}{8}$

GREAT BUSTARD.

Otis tarda (Linn.).

CHAPTER II.

THE GREAT BUSTARD (*Otis tarda*).

Seen to perfection on the Spanish *vegas*—Change of quarters, summer and winter—Question of migration—Local colonies or *bandas*—Remarkable white appearance when flying—Habits during courtship—And after—Nesting-places—Leaving nest—Wholesale taking of eggs—Number of eggs laid by Great Bustard—A popular fallacy—Small size of eggs—Hatching out—Great Bustard in barracks—A "steady old soldier" in charge—Deplorable results!—Weight of Bustards—Abnormal weights in late spring—The gular pouch—Extraordinarily powerful flight—A very silent bird Eagle and Great Bustard.

EVEN the least imaginative of persons though neither sportsman nor naturalist must take an interest in the Great Bustard, the largest of European game birds and one of the finest feathered of all the fowls of the air. A hundred years ago it was still to be found in small numbers in parts of England but it gradually died out between 1830 and 1840; since then it has only appeared as a rare visitor. It has also been driven from France by the constant encroachments on the wide open spaces which are so necessary for its existence. In some parts of Germany it is yet found, whilst in south-east Europe, especially in the valley of the Danube it is abundant.

But the nearest point to our islands where it still lives and is likely to endure for many years to come is in Spain.

Numerous writers have described how this bird inhabits the great corn-growing districts in the Peninsula, and what a splendid sight they make. Much as the Great Bustard is to be admired amid the young corn of early spring, to me, who have lived among them for so many years, there is one sort of country and one alone, which belongs to them and to which they belong, the grass-grown and flower-strewn *vegas* or plains of Andalucia. To me the sight of a Great Bustard in a cornfield, however admirable, is a picture as unsatisfying as a red deer in a park, for in each case bird and beast lacks complete separation from man and his works; and without this separation its native wild beauty cannot tell truly.

Many of these grass-grown plains of southern Spain are liable to floods and in some places during the autumn and winter to total submergence for months at a time. It is at such periods that the Great Bustards desert the level country for the undulating hills around, where they are practically undisturbed and but rarely seen, since few people traverse these districts during the winter months. English sportsmen in quest of wild-fowl or Snipe have often asked me where the Great Bustards go to during the winter, since they are so seldom to be met with. My own explanation is that owing to the vast extent of ground which is suitable to their habits and also owing to the difficulty of exploring the same during the period of the year when the torrential rains occur, the Bustards simply avoid observation. I am aware that this is somewhat of a negative argument and in support of it I have only my own experiences to draw from. These are briefly as follows. On the occasions when I have ridden over the hills I describe during the winter months, I have almost invariably come across small parties of Great Bustard. With the approach of spring they suddenly

reappear in small flocks on the plains and are to be seen feeding on the portions whence the water has recently retired and where the young grasses and herbage are now vigorously sprouting. Referring to my journals I see that this usually occurs about the end of January or early in February.

Upon being disturbed at this time of the year they invariably fly off to the adjacent low-lying hills where it is no easy matter to follow them up and find them, as I know from repeated experience.

Two-thirds of these hills are under cultivation at a time, one-third being laid fallow, and though the furrows turned by the Spanish ploughman with his team of oxen are shallow, the extraordinarily spongy nature of the soil, when the winter rains are on, causes one's horse to sink at places to its hocks and renders walking for any length of time almost impossible either on plough land or fallow. During the wet season in such districts it is no unusual thing for communication to be cut off for days at a time between small villages and isolated *cortijos* or farmsteads and the world, owing to the absence of roads and the awful condition of the *veredas* or tracks and, as I have said before, there are thousands and ten thousands of acres where Bustard could live for weeks and escape observation, more especially from the English sportsman who naturally enough rarely leaves the marshes and low-lying ground.

The Spaniards declare that when the Great Bustards thus disappear from their usual haunts they go "to the Moors." This, by the way, is the stock explanation of all that occurs, or has occurred, in Spain which it is difficult to account for otherwise. Some writers have asserted that the Great Bustard is unknown in Morocco but this is incorrect; although my own wanderings do not extend more than 80 miles south of Tangier I have come across small parties in the level country south of the Kus River between El Kasr el Kebir and the Atlantic. Mr. Meade-Waldo,

who has vastly greater experience than have I of Morocco reports seeing a good many Bustard in the spring months, including one band of twenty-three. But it seems certain that at no time do the numbers in Morocco in any degree approach those which are met with in Andalucia.

Colonel Irby never noticed any migration of the Great Bustard in southern Spain, whereas in the Crimea he saw large flocks passing south during the autumn migration. My own view is that like all so-called resident species in any country, they shift their quarters from time to time and that these movements are dependent on questions of food, general convenience and nesting. But that the Spanish Bustard are a migratory species in the same sense as the Crane and others I do not believe.

These shiftings of quarters may involve considerable flights. Thus during the last eighteen years several Bustards have appeared from time to time on the plain between the Palmones River and the Guadarranque River near Gibraltar, which implied that they had crossed the Sierra for at least twenty-five miles from the nearest possible Bustard country. They have also been seen crossing the Serrania of Ronda, some 60 miles from the plains near Cadiz, but such flights do not necessarily imply a true migration, but rather a change of ground.

It is, of course, no distance across the Straits of Gibraltar, but it seems almost inconceivable that were there a migration of the nature seen by Colonel Irby in the Crimea, neither he nor others like myself who have been many years in the country should have seen anything of it.

Bustards seem to group themselves into small colonies which systematically attach themselves to certain definite districts, which as a rule they do not leave for any considerable period. When in the natural course of seeking their food they fly to outlying places, sooner or later they return to their own piece of country.

I have had evidence of this extending over many years. Every one of these flocks is known to me as well, as to those few of the inhabitants who take any interest in such matters, by the name of the district it comes from. Thus 2 miles south-west of where I dwell there is a flock of thirteen birds known to us as *La banda de* ——. Again about 4 miles east I know of another of seventeen and again 4 miles to the north, of another and yet another beyond. At times these *bandas* join up, and one is afforded the splendid sight of several score of these magnificent birds together. This combined flock on 30 March 1876 numbered sixty-seven birds, and of recent years I have on several occasions seen it at about the same strength and more than once at seventy-four!

On the roof of my dwelling in Spain I have established a look-out whither I often betake myself with telescope and field-glasses. About 1,200 yards from this spot is a slight rise in the ground which is usually covered with rich young grasses a few weeks before the lower portions of the plain afford much feeding. In extent it is only some 4 or 5 acres, but on a fine spring morning it is usual to see it tenanted by several Great Bustards; sometimes by both the local *bandas* of seventeen and thirteen who unite there and, when disturbed, separate and work their way back each to its own particular district.

To see the Great Bustard in all his glory he should be sought in the months of April and May when the *vega* is covered with spring flowers. At places there are great masses of thistles with gorgeous heads whilst all around the silver-grey skeletons of last year's growth, calcined by the torrid sun of the summer, stand up in stiff sparse clusters. These thistles, whilst affording cover from view for the Bustards when taking their siesta at mid-day, at times also lead to their undoing, since a few judiciously placed often serve to conceal the position of the gunner lying prone

during the course of a Bustard drive. For those wary birds, whom nothing can induce to fly over any sort of "hide" or "blind," will cross recklessly over scattered clumps of thistles on the open plains.

On the wing the Great Bustard often appears to the eye to be almost white, which causes surprise to those who see it for the first time and whose knowledge of its colour is got from stuffed specimens with closed wings. For despite the tints of its lavender neck and the marvellous variegated colouring of both back- and wing-coverts, in which almost every conceivable shade of rich siennas, browns and russet reds barred with black is presented; when the bird is on the wing, an entirely different impression is produced. For then white is the prevailing colour, both breast and under-parts are a pure white whilst the vast expanse of wing, over 8 ft. across and broad in proportion as becomes a game bird, is largely marked with white above and is entirely white below. In fact, Great Bustards at a distance, when on the wing are to the eye as white as a Gull.

Many writers have thrown a doubt upon their polygamous habits, but to my mind nothing seems more manifest than that they never pair in the true sense of the word. Every *banda* I have seen consists of a few old males, with a proportion of from double to treble the number of females and no doubt young males. When the eggs are first laid in the standing corn I have occasionally flushed an old male in company with the females, but as soon as the hens have settled down to incubate, they seem to be entirely abandoned by the males which collect in flocks and keep away from them altogether.

The habit of the old male Bustards, as the breeding season approaches, of "showing off" to the females has been often described. Their actions on such occasions in many ways approach that of the domestic Turkey. But the Bustard, owing

to its peculiar colouring which makes it so hard to see at a distance when at rest and so conspicuous when on the wing, when it sets about its antics in one instant completely metamorphoses its appearance. For, when one of these "paroxysms of courtship" comes upon it, the head and neck are thrown back and the tail turned forward, whilst the wings are trailed and inverted and every feather of the axillaries stands on end. The effect is instantly to convert a hitherto brownish bird into a mass of snowy white, double its natural size. Often when riding across the plains have I suddenly detected the presence of a big *banda* of these fine birds which had hitherto escaped my eye, owing to one of them commencing its grotesque manœuvres and presenting a large spot of white in the distance where before nothing was visible. Another and yet another cock quickly respond to the challenge until a whole party of males are engaged in these absurd antics. Those who fail to follow my very inadequate description are recommended to look at the case of Great Bustards at South Kensington, where one is admirably set up in this extraordinary attitude.

One of the most perplexing traits in the Bustard's character is that he by no means confines the period of these antics to the season of courtship. Long after the females have settled down to their eggs in the far distant corn-lands the males, congregated in big flocks, will continue to indulge in their frenzied movements, which, so far as I have ever been able to see, are purely games of "bluff" and "swagger," which never lead to more than a momentary encounter—a sort of collision and "fend off" with another bird, after which both turn about and continue their absurd movements independently. When one watches such an encounter, one can almost imagine one inverted old cock saying to another: "You be off!" "I won't," replies Number Two. "What! *you won't?*" thunders Number One, rustling up to him with creaking

primaries and a generally appalling appearance. "No!" says Number Two, equally crackling all over and strutting around ferociously. "*Then stay where you are,*" remarks Number One, wheeling about and adroitly evading the difficulties of the situation.

The favourite nesting-place of the Great Bustard is amid the corn-lands, this is especially the case when the season is an early one and the young barley or wheat is advanced enough in the month of April to afford good cover. In backward seasons the Bustards seem to prefer the bean-fields, which, although not so high as the young corn, are of thicker growth and give better protection to the hen bird when sitting on her eggs. The great reed-grown plains which have been submerged in winter also offer suitable places for them to nest and I have also found nests on the open grass-lands at places where a few dead thistles and some coarse herbage served to give shelter to the old bird. On the fallows, especially when covered with mustard or any other rank weed, nests may at times be seen. The way in which a female Great Bustard will slip away from her eggs and run for some distance before taking flight without being detected by the sharpest of observers is ever a marvel. When the young corn is 2 ft. or so in height, one can realize the possibilities of such a manœuvre, but among still younger corn or scattered beans not a foot above the ground these great birds are equally expert in not divulging the position of their eggs.

The reverse proceeding is adopted when they return to their eggs, for then they alight a long distance off and somehow or other manage to reach their nest unseen, and despite many hours of watching with field-glass and telescope I have never yet succeeded in actually fixing the precise situation of a nest right away, and it has required a most diligent search before I could find one.

Nest proper there is none, the eggs being deposited on the bare ground; at times, especially when they are amid barley or

wheat, a few dried stalks may by chance be pressed down and form a sort of apology for a nest, but this seems to be a mere matter of chance.

NEST OF GREAT BUSTARD IN BEAN-FIELD.

How any Bustards' nests escape being robbed is a wonder to me. It is the custom in Spain for the farm labourers to form long

lines of twenty to thirty men armed with hoes, with which they traverse systematically every yard of the young standing corn in order to eradicate the rapidly growing weeds which would otherwise choke the corn as it is ripened. These parties are unfortunately always at work in the months of March and April and, consequently, come upon many nests and all fresh Bustards eggs are invariably taken by them to eat. Those Bustards which resort to the bean-fields are even worse off, for when the beans are pulled (about the first week in May) every nest is inevitably found and even if not taken the birds desert the eggs owing to the destruction of all cover around them.

Be it as it may, possibly owing to the immunity which those birds enjoy which wisely resort to the reeds, fallows, and grass-lands to nest, the numbers of these splendid birds in South-Western Andalucia, judging from my own observations, have not decreased during the last thirty years. It would, indeed, be, from the view of the bird lover, almost a European disaster if they were to die out.

It is well known to all interested in bird-life that when once a "fact" regarding natural history has been duly recorded, it takes a long time to disprove it, successive authorities being content to quote from one another without seeking for further information. Among such is the generally accepted statement regarding the number of eggs laid by the Great Bustard which has been recorded as two from time immemorial with the explanation that when four eggs are found in a nest "no doubt two females have laid" in it. In consequence when I first saw a nest with four eggs I duly noted the fact and entered the usual stock explanation in my diary. By good chance my notes some years later were read by the late Lord Lilford, undoubtedly one of the best authorities on the birds of the Spanish Peninsula, who very kindly pencilled across the page: "The Great Bustard often lays four and rarely five eggs. L."

Some years later I met with a second nest with four eggs as recorded by Colonel Irby, but the old fable as to two eggs only died hard and has been repeated in the most recent books.

After Colonel Irby's book appeared I on several occasions found Bustards' nests with three eggs, not four, sometimes considerably incubated but it was not until last year that after a long interval I chanced to be among the Bustards at the right time. In May, 1907, in one beanfield I came across no fewer than four nests containing respectively four, three, three, and two eggs. The beans were being harvested and the country folk, as usual, were taking every Bustard's egg that was fit to eat. At my request they left these nests for me to see. The set of four were somewhat incubated, as were one of the sets of three, the remainder being quite fresh. The photograph here given is of a nest which contained three eggs. Unluckily my horse trod upon one as I came upon the nest.

But what is absolutely conclusive as to Bustards laying at any rate three eggs is that out of a variety of nests with three eggs I have from time to time inspected, not only has the ground colour and general tints and distribution of markings of the eggs forming each particular set been alike but the *texture* (if I may use the word) of the surface of the eggs has been recognizable almost at a glance by anyone who had made eggs a study. In other words, it has been perfectly simple to pick out the eggs belonging to a series of sets and to place them in their own proper groups. In the case in point I had marked in pencil on each separate set of four, three, three and two, and then got a friend to "shuffle" the twelve eggs and place them with the marks downwards, after which I proceeded to pick out the various sets without the slightest trouble.

The set of four which I found in 1907 were of peculiar interest since three out of the four had their shells covered with small excrescences. In addition to this these three were exactly alike

in size, shape and markings. The fourth egg was less granulated and was somewhat larger and more elongated and was also marked more distinctly.

That the three were laid by the same bird is beyond a doubt, whilst the fourth, although thus varying as described, had the unmistakable "family" similarity to the others which would have induced any skilled oologist to class it with them. I am quite content however with the unmistakable proof of the three eggs having been laid by one bird, for if three, why not four and what becomes of the story of the Great Bustard only laying two eggs? Of the two sets of three, one had the usual *opaque* greenish brown ground colour with exactly similar markings in each case, whilst the other set had the far rarer *clear* greenish brown ground colour with much brighter blotches of burnt umber and purplish under-surface markings.

My conclusion, based on many years' experience, is that Great Bustards commonly lay three or four eggs, but in some instances they only lay two, though in others even five eggs.

The remarkably small size of Great Bustards' eggs has surprised many and is directly in opposition to Hewitson's theory that those birds which run from the moment of being hatched lay larger eggs than do others whose young are hatched out in a helpless state. I have often seen Great Bustards' eggs which were very little larger than a Curlew's, yet the first bird weighs ten to fifteen times as much as the second and in both cases the young run from the egg.

Young Bustards, as is well known, like young Plovers, Turkeys or chickens, run from the egg. On one occasion, now many years ago, my brother officer, Harry Fergusson, found a Great Bustard's nest with four eggs; two of these were blown and were found to be fairly fresh, the other two we placed under a hen and installed her in the corner of his one room in barracks. Here she sat steadily

and our hopes and fears were so far realized that, after a week, careful examination showed that the eggs had not suffered from the forty mile journey on horseback, and were "set." After twenty days, one eventful morning a faint cheep was heard from the box and to our great joy we found a young Bustard had commenced to chip the shell and was in a fair way to release itself.

EGGS OF GREAT BUSTARD. (Size 3·3 in. × 2·1 in.)

We passed that forenoon in intense anxiety, being reassured from time to time by a more cheerful cheep. In the afternoon we both had to go out, but as a matter of precaution installed a servant, one of the type known as a "steady old soldier" of the long-service days, to mount guard over our precious charge. To our horror, on our return we found our old soldier diligently at work with a piece of stick removing the shell from one of the eggs, while alongside of him lay a mass of broken egg-shell and a melancholy-looking and extremely small Great Bustard, which he had already extracted from the first egg.

It is hardly necessary to say that the unhappy chick on the floor quickly succumbed to the maltreatment it had received; the second one, despite several injuries from prods with the stick, survived for four days. It was a weird-looking little creature, an atom of down with a big head and long legs, and had a most plaintive and resonant call, out of all proportion to its diminutive body. During its brief existence it fed well and ran about at extraordinary speed around the barrack-room, taking cover amid the rows of boots arranged along the wall.

The weight of a Bustard is a subject of which very varied accounts have been written. Apparently the unfortunate stragglers which have from time to time visited England and been promptly slain must have been very young birds. Yarrell records males of only 16 lb. and females of 9 lb. to 10 lb., whereas the males in Spain commonly weigh between 20 lb. and 30 lb. and the females 12 lb. to 18 lb. Professor Newton mentions 22 lb. to 32 lb. as the average weight of European Bustards. The remarkable variations of weight in birds shot out of the same flocks and in the same localities lead me to believe that Bustards take very much longer to reach maturity than is popularly imagined. Again, they seem to vary enormously in weight according to the season of the year. Out of a number of Bustards I have weighed and examined, those killed in the winter months have averaged only about two-thirds the weight of birds killed in March and April. The smallest Great Bustard I ever saw killed was a young female in the month of February, and which weighed only 12 lb. This bird must have been at least 9 months old.

Of course not many Great Bustards are shot by Englishmen in April, and then only, as a rule, birds required for skinning, for at this time they are in their most splendid plumage. The old males at this time have their necks enormously distended whilst the coloration of the feathers on either side of it is of

extraordinary richness, the delicate lavender grey of the head and throat forming a beautiful contrast to the rich russet gorget below which in some birds almost approaches a vinous red. It is at this period that the birds seem to attain their maximum weight. Six old male birds shot by a party of three guns, of which I was one, in the month of April, averaged over 34 lb. each, the heaviest being 37 lb.; no doubt the contents of the crops accounted for some of this great weight. All the same, judging from subsequent experiences it is my belief that these birds would have scaled very much less had they been shot a month earlier. Certain is it that during the months of March and April the amount of food suitable for Bustards, whether it be young herbage or insects, increases day by day to a marvellous extent, as all those who know Spain in spring-time can testify. The crops of these birds were full of fine grasses and green herbage, having the appearance of spinach in its mashed condition. They also contained big grasshoppers and beetles of various sorts. The mysterious gular pouch, only present in adult males, having its entrance below the tongue, the object of which has baffled so many scientific naturalists, is at this time of the year at its greatest distension and thickly encased in fat. The huge swelled neck is firm to the touch although extremely pliable, and must add no inconsiderable amount to the total weight of the bird. I regret now that I have never weighed the head and neck of an old male bird shot in April and also one killed during the winter months, for I feel sure that the difference between the two would be very great. The story that the gular pouch was an adaptation of Nature to carry a water-supply for the female and young is of course not true.

The flight of the Great Bustard is extraordinarily quick and without effort. Before they take wing they simply walk for a few paces—no attempt at a run—and, opening their snowy white wings,

flap away in what appears to be a most leisurely manner. Save when there is a strong wind, or when coming off higher ground, they rarely fly more than 30 yards above the ground and hence, when they take the right direction, afford good driving shots. Nothing, however, is more deceptive than the pace they fly at, for owing to the steady beats of their immense pinions, some 8 ft. across, they seem to the eye to be moving slowly ; but they are not.

AFTER A GREAT BUSTARD DRIVE.

It has fallen to my lot to organize many Bustard drives and despite the fact that I invariably caution every sportsman who has not seen them before to shoot well forward, it is a remarkable fact that no bird is oftener or more easily missed. This is the experience of everybody I have ever met. To appreciate the extraordinary speed they travel at it is necessary to have a bird pass close over one. More than once, when lying absolutely prone on my face amid a few dead thistles, after a long wait for the drive to come off, a Great Bustard

has passed only a few yards over my lair, at times coming from behind or from some unexpected quarter whilst all one's energies were concentrated in the direction whence the driven birds were expected. On such occasions before one can alter one's position and rise to shoot, it has passed out of shot! Unlike so many other birds—Wild Geese, for example—which obligingly advertise their intentions when being driven by their clamourings, Great Bustards are absolutely silent both when feeding or when on the wing. True, their wings make some noise but not enough to give warning of their approach. A wounded Bustard will show fight and at such times will hiss and utter a snorting sound, something between a short cough and the traditional "Ugh!" of the Redskin. On one occasion only have I ever heard a Bustard give vent to any cry and that was when it was attacked by an Eagle, as I shall shortly describe. Owing to the velocity of their flight and the great weight of their bodies, it not uncommonly happens that a Great Bustard if flying at any height when shot, on striking the ground, bursts itself and in most instances a mass of feathers is knocked out by the impact of the falling bird.

One of the most memorable sights I ever witnessed when amongst the Bustards was in the spring of 1878. We were posted for a drive, and the great birds, as so often happens, refused to be driven and elected to swing in their flight and passed clear of our line of guns. At this moment a White-shouldered Eagle (*Aquila adalberti*), which had been sailing in great circles high over the plain, suddenly descended and with a falcon-like stoop struck one of the Bustards in the flank, knocking out a cloud of feathers. The Bustard gave vent to a series of loud squawking cries and tumbling over for some 20 or 30 yards struck the ground violently. Recovering itself, it ran for some yards and eventually took wing and followed the rest of the flock. The Eagle did not attempt to follow up its advant-

and sailed away, apparently entirely unconcerned. Arrived at the spot below where the Great Bustard had first been struck, Fergusson and I found a number of the rich russet and black barred feathers which adorn the shoulders and upper part of the back of the Bustard, also a short way beyond was a mass of white feathers from the breast and lower parts which had been knocked out by the impact of its 30-lb. weight as it struck the ground.

It is hardly necessary to say that the Eagle probably had no idea of attempting to kill the Bustard and that he struck it out of the sheer exuberance of its feelings. A very similar spirit is at times shown by Peregrine Falcons, which in pure wantonness will stoop and strike some luckless Gull which chances to come across their path when they are returning to their nest on some sea-cliff.

$\frac{1}{4}$

LITTLE BUSTARD.

Otis tetrax (Linn.).

CHAPTER III.

THE LITTLE BUSTARD (*Otis tetrax*).

Most difficult birds to get near—Impossibility of driving them—Beautiful plumage—Peculiar sound produced by wings—Inconspicuous when on ground—General wildness—Methods of approaching them—Nesting habits—Difficulty of finding nest—Cunning of old bird—Curious cry when alarmed.

IN its full nuptial plumage, the male of this species is to my mind the most beautiful of game-birds found in Europe. It is extremely abundant on the low undulating hills and grass-grown plains of south-west Andalucia, but owing to its peculiar habits of flight is very rarely shot by the sportsman. For, when alarmed it almost invariably seeks safety by rising rapidly to a great height far out of shot before making off. For this reason save on rare occasions it is impossible to drive Little Bustard.

It is a common sight to see flocks of these birds, varying from a few dozen to over a hundred, manœuvring high in the air, somewhat after the manner of Golden Plover, often at such an altitude as hardly to be identified were it not that they had been watched previously.

Like the Great Bustard, they appear very white when on the wing, only even more so. For in their immature plumage, as well as in their winter dress, both sexes have the breast as well as the under parts pure white. This general whiteness of appearance is intensified by the primaries and all the secondaries being white as well as the under surface of the wings. The adult male assumes the truly beautiful black-and-white gorget and delicate lavender-coloured throat only upon the approach of the breeding season in March, losing it again in August.

Their flight is effected by extremely rapid beats of the wing, noticeable even at great distances, owing to the flashing of the sunlight on the white portions. The noise produced by their quick motion is one which once heard can never be forgotten and can be likened to a quick sibilant sound of "see-see-see-see," suggestive of that produced by the steam of a railway engine as it gathers way. Probably the Spanish name for this bird of *Sison* (pronounced "see-sone") is derived from this peculiarity as well as the Moorish name of *Sirk-Sirk*.

The general appearance of these birds when on the ground, with wings closed, is very inconspicuous, so much so that it has been stated that they are rarely seen on the ground.

Close to my dwelling in Spain are many hundreds of acres covered with asphodel and it is no uncommon sight to see the Little Bustard run out of this and across the patches of open ground. Again I have often watched a party of twenty or thirty feeding on a grassy hill-side or amid the asphodel not 200 yards distant and I have now and again, by making a wide détour followed by a rapid advance, under cover of the brow of a low hill, closed to within shot of them.

It is only on such ground that it is possible now and again to out-manœuvre them, on the open plain they are as impossible to stalk as they are to drive.

Single birds, and more rarely pairs, are sometimes more approachable, and if disturbed where there is cover will often only fly a few hundred yards and pitch again. When this happens I have killed them by walking quickly towards the spot, allowing 20 yards or so for their habit of running after alighting and the instant they rise firing at them with heavy shot, No. 3 for choice. By this means, they can at times be cut down at long distances and they are well worth the trouble and chances of failure.

Unlike the Great Bustard, they are greatly addicted to running and it is a common experience of those who attempt to drive them to see them suddenly take wing several hundreds of yards from the place where they had been marked down. Once, when posted for a drive and with all my energies concentrated on the spot to my front, whence I momentarily expected a flock of some fifty to rise, I had the mortifying experience of hearing them rise close behind me, after having run with great swiftness under cover of the asphodel between me and the next gun. Small wonder is it, then, that with such perplexing habits very few are ever shot.

Young birds and females have the head, neck, back and wing-coverts of rich shades of brown, spotted and marked with dark browns and black, somewhat resembling Great Bustards. The adult male's plumage is of a more delicate shade of brown, closely pencilled or vermiculated with the same tints, this plumage he retains in winter.

Now and again, during the winter months, when lying concealed waiting for duck or geese, I have had a flock of Little Bustards, in their usual dense formation, swirl past me within a few yards. So sudden has been their appearance and rapid their flight that I have never yet been able to do full justice to such an opportunity. Again, during the hottest time of the summer, single birds will at times lie close; I have also killed them at such a season late in the afternoon when they flight into the marshes to drink.

It is interesting to note that I found these cunning birds, although wild round Tangier, much more approachable three or four days' journey south of that district, sometimes rising within shot. No doubt this is due to their being much less molested in that wild country.

Few nests are more difficult to find than are Little Bustards',

NEST AND EGGS OF LITTLE BUSTARD.

especially when they are amid the rank herbage on the fallow lands or the asphodel, when they are as well concealed as a Partridge's or Quail's. They are almost equally baffling when on the plains among the thousands of acres of waving reeds, 2 ft. or 3 ft. in height, which permit of the old bird running for an indefinite distance from the nest before taking wing. The same remark applies to those placed amongst the standing corn.

The nest varies much in its size and construction, being at

times a well-compacted mass of dried grasses and herbage and in others little more than a chance collection of debris. Where a nest is well concealed, the female will sit very close and not betray its situation until almost trodden upon, whereas in more exposed situations she usually slips off and, crouching, runs some distance before taking wing.

The nest here shown was amid a dense growth of coarse herbage, in which ox-eye daisies and dandelions predominated. The bird only left when I was within 2 ft. of her and in her scuffle and alarm drove a claw through one of the eggs. To get a photograph of this nest, we had to cut a lane towards it and clear away much of the surrounding herbage. This nest was only a slight depression measuring 8 in. across and was lined with grasses and herbs pressed down around it. The two eggs it contained were of a dull-coloured sage green like immense olives; no doubt more would have been laid. They were quite abnormal in colouring, for one of the great peculiarities of the eggs of the Little Bustard is their remarkably smooth and brightly polished surface. I have eggs over thirty years old which still retain this lustre. The normal colouring is a brilliant olive green sometimes almost plain but generally clouded with brown, chiefly at the larger end. Four is the full complement laid, but I have known of nests with three eggs and some in which only two eggs were laid.

The day I found this nest with two eggs was dull and wet with heavy gusts of wind, thoroughly unsuited for photographing such a subject. It was 18 May, and by a remarkable chance, eminently characteristic of the ups and downs of birdsnesting, a few hours later on the very same day, I came across a second nest about 3 miles from the first one. It would be hard to imagine a greater contrast than it presented, for it was on a bare and open hillside, fallow ground with practically no cover on it save that afforded by some scattered patches of rank herbage. The nest was constructed

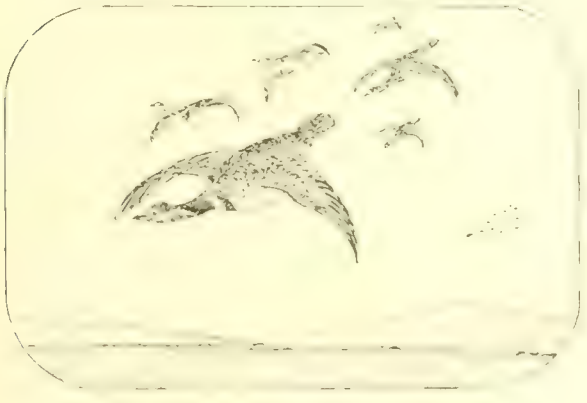
in one of these patches and was quite open to view to any passer-by as can be seen from the picture. The cup of the nest was much deeper and better finished than the cup of the first one being well

EGGS OF LESSER BUSTARD. (Size 1·9 in. × 1·5 in.)

lined with grasses. It contained four richly coloured and shiny eggs probably laid about 7 to 11 May, judging from the state of incubation. The adroitness of the Little Bustard is shown by the fact that despite the open nature of the ground around this nest

and of my keeping a sharp look out, we never saw her leave it and she took wing from a point just 23 yards (measured) from one side of it. I imagine she saw us when a long way off and stepping off the nest ran out to a flank and crouched, with the distinct purpose (in the event of her being forced to take wing, as actually occurred) of misleading us as to the position of her nest.

When alarmed, as for example, when suddenly disturbed from off its nest, it utters a loud guttural rattling cry, somewhat similar to that of a grouse calling in early morning and even more like that given by the Bustard which we came across on the veldt between the Orange and the Modder Rivers during the eventful days of November, 1899.



IV.—*THROUGH THE WOODLANDS.*

CHAPTER I.

A DAY IN THE CORK WOODS.

Great variety of birds met with—Winter residents—Some tardy migrants—The Warblers: Cetti's, Bonelli's, Melodious Willow, Western Orphean, Western Rufous and Nightingale—Blackbirds—Serin Finches—Woodchat Shrikes—Golden Orioles—Protective colouring of Orioles—Artistic nests—Difficult of access—Climbing a tree-top—Scops and Little Owls—Tree-tapping and its results—Hoopoes—Bee-eaters—Their subterranean nests—How to reach them—Cork-oak trees—Game preserving in Spain—Value of the Raptores as assistants—Predacious reptiles and four-footed marauders.

IN Spain, where the naturalist in the woodlands meets with the great tree-nesting species I describe in this book, such as the White-shouldered Eagle and Black Vulture, as well as the many lesser Eagles, the Kites, Hawks and Ravens, he is almost inclined to overlook the host of smaller and less conspicuous birds which make the trees and undergrowth their home during the breeding season. The Warblers alone, though abundant, and heard on every side, are so elusive in their habits and cunning in their choice of nesting-places as to make their separate study and the finding of their nests the work of a lifetime.

GOSHAWK

During the winter months the woods are more or less deserted, the species most frequently seen being the Common Buzzard, which winters in these latitudes, and sundry residents, such as the Raven and Jay, Great Spotted Woodpecker, Great Titmouse, Chaffinch, Goldfinch and Serin Finch. But as spring approaches all is changed. Owing to the temperate nature of the climate and warmth of the sun, even in winter certain migratory species, such as the Common Swallow, never entirely leave the country, and no doubt for the same reasons some of the lessers Warblers likewise linger there. Those acquainted with the distinctive calls of these minute birds will hear some of them even during the depths of winter, when, according to popularly accepted ideas, they should be, with the rest of their class, many hundreds of miles south of the Straits. Amongst the smallest birds is Cetti's Warbler (*Cettia cetti*). It has a loud and penetrating cry, which, when once learnt, is never forgotten. These little birds delight in the cane brake and brambles which cover every moist spot, amid which they make a most beautiful little cup-shaped nest, delicately woven of fibres, hair and wool for their rich rose-madder-coloured eggs, quite the reddest of any small eggs I know.

In the glades of the lower-lying parts of the Cork Woods near Gibraltar there are deep *sotos*, or swamps, in fact miniature *lagunas*, the placid surface of which in early spring is white with the flowers of the water ranunculus. It is in such secluded spots that Cetti's and other Warblers delight. In the masses of golden cytisus around these swamps another minute bird, Bonelli's Warbler (*Phylloscopus bonelli*), constructs its dome-shaped nest and deposits its small spotted eggs. These nests much resemble those of our Common Wren. It is very probable that this little bird, like the Chiff-Chaff, Wood and Willow Warblers, would nest on the ground were it not for the snakes and lizards, to avoid which it resorts to the fragile branches of the cytisus. Unfortunately,

these delicate shrubs offer small resistance to either man or beast who may wish to penetrate them ; hence, on several occasions, I have known of nests of Bonelli's Warbler which have been destroyed by passing cattle as they forced their way through the undergrowth in search of pasture.

In the closer-growing bushes along the edge of the streams a beautiful little Warbler, one of the Melodious Willow Warbler group, known as *Hypolais polyglotta*, from its rich and varied song, also nests. A widely distributed species is the Western Orphean Warbler (*Sylvia orphea*), which builds a cup-shaped nest on the branches of the smaller cork trees about 8 to 10 ft. above the ground, and lays eggs closely resembling those of our Garden Warbler. Needless to say that in Andalucia, from the first week in April and onward, the voice of the Nightingale is heard from every clump of brambles or jungle-covered marsh. All the nests I have come across have been invariably placed in bushes some little height above the ground and not on the ground as in England. Probably here again the birds endeavour by such means to avoid the predatory reptiles which are so abundant.

One of the most frequently seen among the spring arrivals is the bright-coloured Western Rufous Warbler (*Aëdon galactodes*). They are particularly partial to the big aloe hedges which at many places skirt the patches of cultivation and by their lively actions and conspicuous plumage attract the eye far more than do any of the other Warblers. In many ways they resemble the Nightingale, but are larger and far brighter coloured and, as they flit from bush to bush, erect and expand their tails, which are rufous in the centre and have the outer feathers white, barred with black at the end. This peculiar habit induced Colonel Irby to style these birds the "Cock-tail Warbler" and a very descriptive name it is.

The Common Blackbird swarms in southern Spain, and nests

in the dense lentiscus or wild olive trees scattered through the cork forests. Curiously enough they seem never to lay more than three eggs in place of the four or five usually found in nests in England. I mention this because I have never seen or heard of a nest with more than three eggs.

Among the upper branches of the cork-oak trees, the Serin Finch (*Fringilla serinus*) nests, a sort of diminutive wild Canary, its weak sibilant song being heard on all sides.

One of the commonest of the woodland birds is the Woodchat Shrike (*Lanius rufus*), which nests in great numbers in the olive and smaller cork-oak trees. They are handsome birds, particularly the males, and on their first arrival are very noticeable as they sit bolt upright with their white breasts showing conspicuously. Like other Shrikes they lay two distinctly differently coloured sets of eggs, one being of warm stone-coloured ground and the other pale green, both alike being much spotted at the larger end.

Among the spring arrivals, the Golden Oriole (*Oriolus galbula*) is conspicuous by reason both of the splendid plumage of the male and his melodious whistling call which once heard can never be forgotten. Amid the cork forests where these birds, in common with other migrants, find a temporary resting-place on their first arrival from southern latitudes, there are numerous grass-grown glades adjoining the *sotos* or swampy portions. Along such places both ash and Spanish oak are commonly to be met with, which at the time of the arrival of the Orioles in the month of April are clad in the brilliant green foliage of early spring. These trees seem to offer peculiar attraction to Orioles and often have I endeavoured to detect these birds as they sat embowered among the green leaves, uttering their tuneful calls. In the brilliant sunshine the high lights and dark shadows cast on the leaves so exactly tone both with the yellow and black of the males and the green and dark brown of the females as to make it a hard task

to pick them out even with the most powerful glass. When alarmed, the Orioles, upon quitting such a natural sanctuary almost invariably thread their way with undulating flight to a similar tree, passing by those such as cork-oaks and olives which are of more sombre tint. I have repeatedly watched this for many years past, and am convinced it is no mere chance but a regular habit and it may be taken as an axiom that if Orioles are heard to be calling on a wooded hillside it is almost a certainty that they will be found perched in the most vividly-foliaged trees in the neighbourhood. A certain number remain to nest in southern Andalucia and all the nests I have seen have been suspended to the branches of the Spanish oak, usually towards the extremity of some pendent bough.

These nests are beautifully constructed of fine mosses, lichens and fibrous roots woven around the twigs and lined with horsehair and wool. The eggs are white, delicately spotted and blotched with purple. In 1906 I found a nest among the smaller branches near the summit of an oak, about 40 ft. up, and ascended the tree. When still some 12 ft. below the nest, it became clear that the branches would not support my weight. I was most anxious to take the eggs and so set to work to get at this seemingly inaccessible nest. By climbing up an adjacent and somewhat stouter branch which shot upwards for a few feet, I reached a point whence I was able to pass the end of my silk rope round a second branch near the one supporting the Orioles' nest. I then extemporized a tackle and by its aid hauled the two boughs together, making them fast with the end of my *faja*, or sash. I now used the two branches as a second point of support and ascending them yet higher, got my line once again round another branch, and hauling it in, also made it fast to the other two. By this means I eventually reached a point on the level of the nest whence I was able to pass the end of my silk rope round the branch containing my prize and, by hauling it in to

my somewhat precarious perch, bring it within my grasp. It was an interesting bit of work, and afforded a good refutation of the reputed inaccessibility of nests of the Orioles thus placed amid the smaller branches of high trees. From my experience on this and other occasions, I believe that, given sufficient light rope and ordinary skill at climbing and using ropes, no nest of this description is safe from the determined birdsnester.

Among the nesters in the hollow cork-oaks and alders are the Great Spotted Woodpecker, the beautiful Hoopoes (*Upupa epops*), and the Scops and Little Owls (*Scops giu* and *Carine noctua*).

I know of no more elusive birds than these dwellers in old trees. Many years ago Colonel Irby found several nests of the Scops Owl by tapping the trees and in consequence wrote: "The nest is easily discovered by going round and hammering at the old cork trees with a stick."

For over thirty-four years I have sought the nests of these small Owls and have ridden and walked hundred of miles and tapped thousands of trees in their quest. Further, I have induced innumerable friends to go and do likewise, and without result, for never yet have I put an Owl off its nest by such methods. It was after one such day with some naval officers that somebody remarked that if Colonel Irby had realized the flow of appalling bad language which was the direct outcome of his advice to hammer the trees, he would probably have thought twice before placing it on record.

One of the most mysterious of the calls among the dense woods is that of the Hoopoe. It consists of a curiously soft and hooting cry of "Hoo, Hoo, Hoo," repeated at short intervals. Although I know of many pairs in different parts of the country, it is seldom indeed that one is able to find the nest.

But of all the spring migrants which herald the approach of the nesting season none is more remarkable or more constant than the brilliantly coloured Bee-eater (*Merops apiaster*).

These lovely birds arrive with most extraordinary punctuality year after year, at first in small parties of a dozen or so and then in continuous streams. Their call is unlike that of any other bird, a curious liquid double note, which at times, when many are passing over, seems almost to fill the air with its sound. And

A GLADE IN THE CORK WOODS.

a very joyful sound it is, for it is an unmistakable proof that spring is upon the land. The first arrivals are usually heard about 4 to 7 April and from that date onward parties pass overhead for weeks, scattering all over southern Europe. The climax to the migration, according to Colonel Irby's and my own

observations, is about 19 April; hence, following the Spanish custom he christened it "St. Bee-eater's Day" and as such it has been known for years to all who had the happiness to wander in the wilds of southern Spain with that truly admirable ornithologist. In the small garden surrounding my little dwelling in the wilds there are placed many of the cork bee-hives, known in Spain as *colmenares*, and year after year have I been awakened at an early hour during the first days of April by the well-known liquid cry of the Bee-eaters as, pausing in their first flight from the African shores, they proceed to take toll of the luckless bees swarming about the hives. The number of bees one of these birds can devour is almost incredible.

I know of few more fascinating occupations than a ride or stroll through the cork forests, now threading one's way through dense woods, now emerging on some grassy glade, across which the roe-deer dart silently, following the sinuous tracks made by many generations of pack animals, which at times have cut deep through some sandy bluff or hillside making narrow passages hardly wide enough for a laden beast to pass. In the vertical sand-banks thus formed, the Bee-eaters burrow their deep tunnelled passages, often for 10 ft. or more, Sand-Martin fashion, and deposit three or four shining round white eggs in a small chamber at the far end. The simplest way to get at these nests is to watch the birds entering and leaving the numerous holes, until one which is in occupation is detected. Armed with a telescopic Japanese fishing-rod, I have plumbed many such burrows and when one is found which trends upwards so as to be within reasonable reach of the surface of the ground above, by carefully measuring the length of the burrow and noting its direction, I have dug down from above and reached the nest with but little trouble.

There are various perplexing points in the Bee-eater's habits. Thus they make many more burrows than they require; possibly,

on meeting with a stone or hard stratum which bars the way they abandon the task and try afresh elsewhere. Again, some nests are placed in a chamber mid-way down a burrow and not at the end. A few weeks after the Bee-eaters have settled down to their nesting stations their long, sharp-pointed bills are worn down considerably from constant work at excavating their burrows. Very favourite nesting stations for Bee-eaters are the sandy banks of rivers and other natural cuttings in the open country.

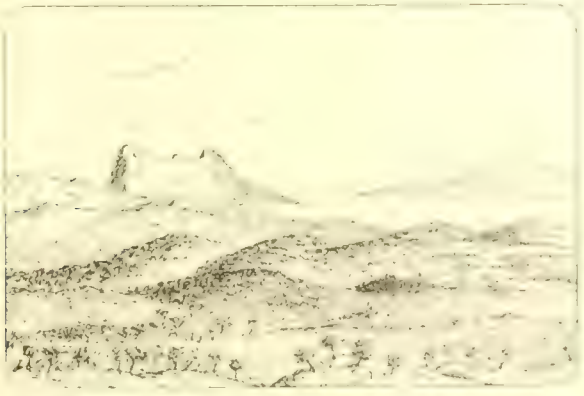
The cork-oak tree is unquestionably a very picturesque object, and the ravages made on it by removing the external bark every seventh year in a way add to the beauty of the vistas seen through the woods. For the trunks, bereft of the cork, are of the richest chocolate red, and the effect of the sunlight and shadow playing through the leafy canopy on the dark rugged stems, dotted here and there amid the brilliant golden blossoms and green foliage of genista and high bracken, is a joy for ever. It is curious how deep and chequered are the shadows cast by these trees, and how hard it often is to discern either man or beast moving through the scrub below them.

A native wearing the favourite dark brown chocolate jacket, standing leaning on his long stick, as is their habit, assimilates so perfectly with the surroundings as to make one start on suddenly becoming aware of his proximity. I have always thought that the chocolate brown uniform worn by the Portuguese Caçadores in the Light Division during the Peninsular War was probably chosen for this reason of its invisibility in wooded and broken country. The trunks of the larger cork trees, above where the cork has been removed, are usually covered with mosses and hare's-foot fern, and make a very beautiful spectacle.

Of the flowers and flowering shrubs met with in the cork forests, together with the butterflies and teeming insect-life, I can only say, go and see them in April and May.

It is sad to have to record that of late years, owing to the extension of the custom of game preserving in Spain, war of extermination has been declared in many places against the Eagles, Falcons, Kites, Harriers and Hawks. That some of these do some damage among the Partridges and rabbits is undeniable, but the majority of them habitually feed upon the snakes and huge lizards which are the deadly foes of all winged game and likewise devour their eggs. Hence in no country should the birds of prey be more encouraged and protected than in Spain.

But the greatest enemies of all game, both winged and four-footed, in Spain are the numerous predaceous animals which in some districts literally swarm. Besides lynx, foxes and badgers there are wild cats, ichneumons, genets, martens, polecats, stoats and weasels, to name only some at random. I mention this subject here as, on the chance of this book falling into the hands of those interested in game preservation in Spain, they will possibly be led to devote their energies to the destruction of the four-footed marauders and to enlist the services of the Eagles, Kites and Harriers in keeping within bounds the deadly ravages of the reptilia.



CHAPTER II.

THE KITES AND HAWKS.

The Red Kite (*Milvus ictinus*)—Marvellous powers of flight—Important part played by tail—A Kite's nest—A stiff climb—Trapping the old bird—Revisit nest twenty-four years later—Kites and reptiles—Immense damage wrought by reptiles in Spain—Raptorial birds the principal check on their numbers.

The Black Kite (*Milvus migrans*)—Simple means of identifying on the wing—Spring migration—A colony of Black Kites—Nesting-places—Curious predilection for rags and paper.

The Goshawk (*Astur palumbarius*)—Retiring habits—Constancy to same nesting-place—A doubtful nest—Failure to identify bird—A stratagem and its result.

The Sparrowhawk (*Accipiter nisus*)—Nest in Booted Eagle's tree—Climbing ivy-clad trees.

THE RED KITE (*Milvus ictinus*).

IT has often occurred to me when watching Kites on the wing that few birds afford a more instructive exhibition of the art or mechanism of flying. Whether this be due to some subtle combination of wing-power, relative weight or peculiarity of build it is hard to say, but it is certain that the Kites leave the impression that they can move with greater ease and precision than do most other birds.

The Red Kite owing to ceaseless persecution in our Isles, is rarely seen and naturally enough is averse from being watched

BLACK KITE

RED KITE

by its arch-enemy, man. Even in Spain, where it is so abundant and so little molested, it is not always easy to watch its graceful movements at close range. But across the Straits, in Morocco, it ceases to have any fear of man, and to me one of the added pleasures of camping out in the wilder parts of that country is to watch the Kites on the wing at close quarters. It was not until I had such an experience that I appreciated the marvel of precision and grace combined which characterize the least movements of the Kite. When on the march in Morocco I found it interesting to note how soon after we got our pack animals unladen and tents pitched, a pair of Red Kites would appear and constitute themselves the guardians of the spot, circling often not 20 ft. above us and keenly watching for any fragments worthy of their attention. After a few easy strokes of its wings, no laboured flapping, one would glide slowly past on motionless pinions, with head inclined and bright yellow eye closely examining all below, and, as it passed between us and the sun, the delicately coloured forked tail seemed almost transparent and assumed a bright rufous tint. Suddenly, with a quick but well-defined motion the angle of the tail would be altered and, obedient to this movement, the course of the bird would be changed with mechanical precision until a second quick turn of the tail brought it back to its former course or caused it to sweep round, as the case might be. Watching a Kite so close at hand makes one realize what a vastly important part in the mechanism of the flight of birds is played by the tail. Of course the amount which is brought into use varies greatly, according to the habits and flight of various orders of birds and very probably there may be many which make even more use of it than does the Kite. But owing to the conspicuous colour and abnormal length and shape of the Kite's tail, which attracts the eye of the least observant of people, the effect it produces on the movements of the bird is far easier to realize and enables the spectator to appreciate

the connection between cause and effect. Besides the quick lateral alteration of the position of the tail, there is another movement whereby the height of the flight is regulated, and yet again another, the sudden expansion of the tail like an opened fan, whereby the speed is instantly checked. It is after watching the Kites thus gliding, seemingly without effort at all angles and in all directions, that one despairs of the audacity of man's attempts to convert himself into a flying machine.

It was one of the many red-letter days in my birdsnesting life when I first succeeded in marking some Red Kites to their nesting-place at the top of a tall pine. The tree was without branches for over 35 ft., with the exception of a small rotten-looking stump about 20 ft. from the ground. At the time I was innocent of ropes or other appliances for tree-climbing. So I set to work to swarm up the big slippery trunk and after a severe struggle reached the small stump where I rested to recover my wind and then resumed the ascent. I shall never forget my joy at seeing the two beautiful eggs lying on the dirty platform of old rags and goat's hair with which the nest was lined. Sending down my prize in a box on a line, I hauled up my trap, an iron one with blunted teeth and padded jaws, a present from Lord Lilford, and set it in the nest. After covering it with some of the lining, and placing a hen's egg beyond it, I descended and concealed myself in the cistus scrub some 200 yards distant. Very shortly the Kite returned and, entering the nest, sprang the trap. Next moment she dashed off, but the line on the trap soon brought her up and she came to the ground. It was my first attempt at trapping a big raptorial bird and I was mightily pleased to find she was caught by one of her centre toes and absolutely unhurt. It is hard to imagine the beauty of a wild bird thus caught alive and unharmed. It surpasses beyond belief the appearance of birds kept alive in confinement or mounted by the most skilful of taxidermists.

I kept this bird in barracks for about three weeks after which she was released and I had the pleasure of seeing her, together with her mate, when riding past the pine woods some days later, still wearing the leather jesses I had put on her legs, but no doubt they very soon dropped off.

This was in 1879; many years afterwards, in May, 1903, I took Admiral Farquhar to this nest and found it again occupied by a Red Kite. The old bird was sitting so close that she declined to move until my lead weight struck the tree close to her. We soon got a line up and ran one of our party up to the nest. This nest contained a young Kite about 2 weeks old and a second, a week old, besides one egg, a curious proof of the irregularity of laying of some birds. There were also the remains of an Ocellated Lizard about 18 in. in length. Those sportsmen, and alas! there are many, who advocate the killing of these Kites, Harriers and Eagles in Spain on the pitiful pretext that they are 'so destructive to game' would do well to consider the enormous amount of assistance they receive in the protection of game from these same birds. The havoc wrought by the vast number of big snakes and lizards in the Spanish Peninsula among both birds and the smaller mammals is well-nigh incredible. Both classes of reptiles not only devour both eggs and young birds but, when opportunity offers, the parent birds as well. In fact, the only thing which keeps the numbers of these most predaceous reptiles at all within bounds is the persistent preying on them by so many of the larger raptorial birds. Unfortunately the misdeeds of the birds such, as taking a Partridge or a rabbit, are done in the light of day and are at times seen and animadverted upon, whereas the reptiles work quietly and unseen, often by night and always under cover. Hence the extent of their depredations is generally unappreciated. For one luckless rabbit pounced upon by an Eagle, scores of young ones are swallowed wholesale by the reptiles who exploit their burrows. Hence all

and every means of reducing the number of the snakes and lizards tends ultimately to increase the amount both of winged game and rabbits, which are held in high esteem in Spain.

Upon the amount of good done by the whole family of raptores in this way nobody can speak with such decisive authority as the birdsnester and above all one who habitually visits all the nests himself and is accustomed to take note of what he sees. The outcome of my own personal observations extending over thirty-four years is that with hardly an exception all the so-called game-destroying Eagles and Hawks habitually prey upon the larger reptiles, as is well shown by the fact that it is rare to find one of their nests without the remains of a snake or big lizard, particularly the latter, whereas it is the exception to find rabbits and still more so to see Partridge's feathers.

BLACK KITE (*Milvus migrans*).

Closely allied to the Red Kite is the Black Kite, the former however is a resident in southern Spain whereas the latter is one of the many spring, migrants. As can be seen from the Plate of the two species there is a strong family resemblance between them. On the wing it is not difficult to identify either species, for even at a considerable distance the more deeply forked tail of the Red Kite is clearly distinguishable, whilst, should the birds be overhead, the Red Kite's wings are much lighter on their under surface and are marked with a conspicuous dark patch upon each. Lastly, the Black Kite, besides being darker under the wings has a distinctly darker appearance all over than has its relative, whence its name.

Every spring great numbers of Black Kites pass northward over the Straits. The first of the migration usually occurs during

the first week in March and it is at its height during the last week. Some few remain to breed at various places in the vicinity but the bulk of them pass further north and nest in colonies. In May 1879 I visited one of these in the Coto de Doñana with Crown Prince Rudolf, and I climbed up and took several nests. On one occasion I saw no less than twenty-two of these birds

NEST OF BLACK KITE IN CORK TREE

congregated on one of the sun-baked mud flats amid the sand hills and pine woods of the marisma. It was near the end of May and the ground was like iron and the herbage burnt up by the fierce rays of the sun. Yet these birds seemed to be feeding upon something, possibly small grasshoppers of sorts. When disturbed they gave a sharp tremulous cry as they took wing.

Both Black and Red Kites often nest in comparatively small

trees. I have found several nests placed in cork trees 20 ft. to 30 ft. from the ground. They would seem whenever possible to prefer using the deserted nest of some other bird to going to the trouble of building one for themselves. Thus, those in the cork-oak trees

NEST AND EGGS OF BLACK KITE.

were invariably disused nests of the Snake Eagle which I had seen tenanted by those birds in former years. The nests in the Spanish oaks were similarly those of the Booted Eagle and most, but not all, of those in the pine trees were old Ravens' nests. The nest shown on the preceding page is in a cork tree about 30 ft. from

the ground and was originally built by a pair of Snake Eagles. The sharp turn taken by the branch in which the nest is placed gives some slight protection against the casual marauder but none whatever against an expert climber.

As is well known, Kites are much addicted to lining their nests with pieces of rag and paper and all sorts of curious and unconsidered trifles. The Black Kite seems to possess this curious mania to a marked degree and some nests I have visited have been literally festooned with such rubbish. The classic example of this was narrated by Lord Lilford to me in 1876. It was in 1870 that he visited a Black Kite's nest in a remote district and found in it among other things a fragment of a Spanish newspaper in which the assassination of the unfortunate General Prim was announced.

I can pretend to nothing so interesting in the Kite's nests I have visited. In one instance I found a delicate cambric handkerchief which must have been brought from afar, since the good folk of the sierra do not indulge in such luxuries. In this nest, of which a photograph is here given, there were many coloured rags including a piece of curiously worked brocade which was spread out alongside the eggs as shown.

THE GOSHAWK (*Astur palumbarius*).

In the more secluded portions of the large forests of cork-oak trees in Andalucia the Goshawk lives all the year round but owing to its peculiarly retiring and sylvan habits usually escapes observation. Thus I have known of some which have regularly nested in the same district since 1871, when Colonel Irby first found the nest, yet never once have I seen these fine short-winged Hawks save when I have put the old bird off the nest. It would be difficult to give better evidence of their unobtrusive habits. The

nest of 1871 was in an alder tree only 15 ft. from the ground, or rather water, since it was in the midst of the almost impenetrable jungle which covers the deep *sotos* or marshes in the woodland districts. Twenty years later the Goshawks still nested in the same locality if not in the same tree and the last time I visited the spot, in 1903, they were still there. In the interval the old nesting-place had been disturbed owing to the work of clearing the *soto*, and, alas! of draining it too. The alders had been cut down and the Goshawks had resorted to an ivy-covered poplar, where there was a disused nest of the Booted Eagle about 40 ft. from the ground. I was at the time unable to climb, and so regretfully delegated the task to a naval officer who took from the nest three eggs. It was on 2 May, and they were somewhat incubated and stained all over with yellow and pale brown like a Grebe's egg, exactly as described by Colonel Irby in the nest he took thirty-two years earlier from the same place. Since 1902 the work of clearing the jungle has been continued and the Goshawks have been obliged to seek other quarters.

In April 1906 when walking through a very thickly wooded portion of the cork forest within a mile of the old nesting-site, I put a big bird off a nest near the summit of an ivy-grown Spanish oak. A friend with me climbed up and reported two eggs which I suspected to be Goshawk's, since he described them as being of a bluish tinge. I was most anxious to take some Goshawk's eggs with my own hands, in accordance with the rule which I have set before me throughout life where my own egg-collection is concerned, but it was useless to touch these unless I could identify the bird for certain. So after leaving the spot for some hours so as to give the old bird plenty of time to return and settle down, I again approached the nest quietly and again put her off it. Owing, however, to the dense foliage which formed a regular canopy overhead, it was impossible to say for certain

whether it was a Booted Eagle, a Goshawk, or some other large Hawk. So I concealed myself carefully under a mass of brambles at a point whence I could command a view of the nest and waited patiently until near sundown, but the old bird never returned.

Two days later I revisited the spot and again put the bird off and again failed to identify her. It was becoming past a joke for I was extremely anxious to make sure of the eggs. I did not want to shoot the bird, that panacea for all ornithological doubt which has led to the unnecessary slaughter of so many rare birds, nor did I feel equal to the task of trapping her, since this might involve several troublesome climbs for which I was not strong enough. So I did what I should have done sooner—had recourse to a stratagem. My various futile attempts at identifying the bird had taught me that when she left the nest she invariably followed the same course, threading her way at speed between the tops of the surrounding trees. Following up this line, I shortly came upon an open glade and it at once struck me that this must be the route she took when making her retreat unseen.

The following day I returned to the wood and making a wide detour entered the glade about a quarter of a mile from the nest, and moved down it cautiously until I could command the point whence I reckoned that the bird must emerge after leaving her nest. Concealing myself in some scrub not 200 yards from this point I sent my Spaniard round with orders to approach the nest from the far side, making just sufficient noise to induce the bird to slip away quietly. Half an hour had elapsed when I heard my man's voice singing to himself one of the wild cadences known as *malagueñas*, after the custom of his kind when travelling alone, next moment a large bird suddenly emerged from the wood through the top of the trees to my front at the exact spot I was watching and upon reaching the glade dipped downwards until hardly [illegible] above the ground and came skimming right towards me. Next

instant I sprang to my feet and we met literally face to face. An unmistakable female Goshawk! So close were we that I could see every marking on her richly barred breast as with outspread tail she violently checked her flight and swerving round dashed off out of sight through the woods to my right. The identification was absolute. So proceeding to the nest I climbed up to it with no small difficulty and took the eggs, three in number, for she had laid another since my visit three days earlier. But any attempts at photographing the nest or eggs were foredoomed to failure. It was a beautiful day with a fresh breeze, and the whole upper portion of the tree was swaying to the wind. In addition the canopy of green leaves above the nest, bending to every fresh gust of wind, cast a chequered shade on the eggs which varied every instant. My camera was a one-speed Kodak, and it was clearly hopeless to look for success under such adverse conditions. Nor did I achieve it. Descending, I endeavoured to obtain at least a picture of the tree and nest from below. This proved equally hopeless, for the tree stood in a densely overgrown and shady part of the forest and was surrounded by others festooned with swaths of wild vine and sarsaparilla, which, surging in the wind, impeded the view from every side. The nest itself was almost concealed from view by the ivy below it and was not visible at all in the finder of the camera. Experience of many nests in similar positions has taught me the inutility of attempting to photograph them, since, no matter how clear the prints may be, the whole subject is on such a small scale as to render it of very secondary interest.

THE SPARROWHAWK (*Accipiter nisus*).

This well-known British species is rather scarce in south-west Andalucia despite the great extent of woods and country suitable to its habits. I fancy, however, it is commoner than is supposed,

for in my wanderings in the sylvan districts I now and again come across one. The first nest I found was on 8 May 1878 in the disused nest of a Booted Eagle, near the summit of a very tall ivy-covered oak. It contained three beautifully marked eggs, which I have in my collection.

Three years previously the Booted Eagles had occupied this same nest. The tree itself was practically unclimbable without ropes, owing to its great size. Thanks, however, to the masses of encircling ivy I was able to overcome this difficulty and obtain a lodgment at a point where the girth of the tree permitted of regular climbing. With the memories of this climb still fresh within me, I would advise all who essay to climb big trees by the aid of ivy stems to be extremely careful how they depend upon these for support, for they are extremely treacherous, and it at times happens that seemingly strong and healthy ivy stems upon being put to a strain snap off like carrots.

CHAPTER III.

THE BOOTED EAGLE (*Nisaëtus pennatus*) AND THE SNAKE EAGLE (*Circaëtus gallicus*).

THE BOOTED EAGLE—Nesting habits—Eaglets—An indignant mother—Rearing Eaglets—Their sulky nature—A hard struggle—"Operations of War"—Flying Eagles to the "lure"—An Eagle overboard.

THE SNAKE EAGLE—Remarkable brilliancy of irides—Flooded out reptiles—Nesting habits of Snake Eagle—A fallen Eaglet—A close sitter—Uses for a catapult—Awkward Photography—Hatching out an Eaglet—Photographing Eaglets—Trapping an Eagle—Taming an adult Eagle.

THE BOOTED EAGLE (*Nisaëtus pennatus*).

THIS is yet another of the tree-nesting Eagles of southern Europe, and is found in abundance in the cork forests and pine woods of Andalucia. It is a beautiful little bird, in size very little larger than a female Peregrine, but as regards structure and plumage every inch an Eagle. It owes its name of Booted to the closely growing light brownish yellow feathers which cover the tarsus to the foot.

Essentially a summer visitant, it crosses from Africa about the end of March, nesting about a month later and returning again south in September. Considering the large number that nest in the great cork forests it is remarkable how comparatively seldom it is seen

BOOTED EAGLE.

Nisaëtus pennatus (Gmelin)

on the wing, though during the summer months its cry can be heard at intervals throughout the day.

NEST OF THE BOOTED EAGLE IN SPANISH OAK.

It often nests in some ivy-grown tree, preferably an oak, but at other times in a cork tree. The nest is small and often difficult to see on account of the ivy. A favourite situation is in the fork of

a bough close to the bole, thus differing from the Snake Eagle, which habitually builds its nest well out along a bough. Booted Eagles will at times lay in the disused nests of the Snake Eagle.

They usually select a tree which affords a good site for a nest, 30 ft. to 40 ft. from the ground and they seem to have a particular affection for trees growing near the summit of a steep hillside. At times they will resort to lower sites, thus the nest of which a picture is given was placed in the fork of an oak tree not 15 ft. from the ground, the tree, however, was near the top of a steep bluff, full 60 ft. high.

I have never yet seen a nest of the Booted Eagle that I could not climb to. For a few a rope was required to surmount the lower portion of the trunk, whilst in other cases this could be effected more conveniently by climbing a pendent bough.

The picture, given in II., Chapter IV on p. 63, on Tree-Climbing, of ascending a tree in this fashion is of one that has been used for years by Booted Eagles and is still in their occupation.

All the nests I have visited, and they are many, have been built of branches of oak bearing the dead leaves, thickly lined with fresh green oak leaves. The care bestowed by these Eagles in providing a plentiful lining to their nests is well shown by the accompanying picture which was taken when the first egg was laid and all the leaves composing the lining were recently plucked. They lay from one to three white eggs, much the same size and shape as Bantam Fowl's. Two is probably the most usual number laid and several days usually pass between the laying of the first and second egg. They are somewhat irregular in their date of nesting, thus I have found a nest with freshly laid eggs as early as 12 April, and others again so late as 25 May. Again I have found a nest with a young bird only 2 or 3 days old on 27 June and another containing two fully fledged young, certainly 6 weeks old on 1 July, only four days later, in the same season.

I first made the acquaintance of the Booted Eagle in May 1875 when I found a pair nesting in a very tall ivy-covered oak in the

EGG OF BOOTED EAGLE. (Size 2·2 in. × 1·7 in.)

Cork Woods near Gibraltar and the successors of this pair still nest in an almost similar tree only a few hundred yards from the site of the first one which was cut down many years ago.

The young birds begin to shoot their quill feathers at the end of the third week, thus the nestling of 27 June, already described, had its quills just budding on 17 July. On this visit the old Eagle, which had left the nest as I climbed up, upon my reaching it came sweeping round and alighted on a branch not 30 ft. from me. Here it remained with all its feathers raised and wings expanded, screaming vigorously for so long as I was at the nest. This is the only instance which I have experienced of a parent Eagle making even a show of protecting its young.

When a Booted Eagle is sitting in its nest and is disturbed it makes upon leaving an extraordinary headlong dive, at times almost touching the ground before it curves upwards and flies away. I have no doubt in my own mind that it is this habit which induces these birds to select for nesting-stations trees growing on the sides of steep hills, which afford especial conveniences for this mode of retreat. It is curious how very easy it is to miss shooting an Eagle when making this dive; of this I have seen repeated examples. Booted Eagles are very easily trapped on the nest for they return to it very soon. I have taken them thus for purposes of examination and identification and subsequently released them none the worse.

Their favourite food is young rabbits, lizards and snakes. Their eggs are often stained with the dye from the freshly gathered oak-leaves, which form the lining of the nest.

The general colour of the old birds is brown above and light tawny yellow below; the young in their first plumage are usually very much more rufous in colour, but some are as light as the adult birds.

I have reared the young from the nest on several occasions and with complete success. In the year 1879 I had three, two from one nest, and a third from a second nest. I took them all just before they were able to fly and in consequence had no trouble

in rearing them, as to cramp and other ailments. They soon became very tame and would take food from my hand but a few weeks later developed the true aquiline characteristic of sulking. I had prior to this placed jesses on their legs and kept them secured by swivel and leash to their blocks, and had further, accustomed them to being carried on my wrist in falconer's fashion. To all this they submitted quietly enough but with the hour of feeding came the trouble. So long as I remained near them, even if the food was placed close in front of them, they would refuse to look at it. Things grew worse and eventually it became a regular trial of endurance between us as to whose determination should obtain the mastery. In vain did I starve them for several days hoping thus to reduce them to subjection. My fears of doing them permanent injury by inducing "hunger-traces" in their beautiful plumage caused me to desist from this. On their side, they reckoned on my becoming tired of standing watching them and here they were right, for my time was of peculiar value at this period of my career. I was reading for the Staff College. It was now that I hit upon the happy expedient of arranging a seat in the shade of my hut so that I could study "Hamley's Operations of War" and keep a watchful eye on the recalcitrant trio, tethered in front of me, at one and the same time. This fairly wore them down and finally, one day, after an hour or more of distracting study with one eye on the Jena Campaign and the other on the three rebels, I heard a flutter and first one and then the others dashed at the portions of rabbits in front of them, and seizing them, instantly turned their backs and expanded their wings and tails so as to conceal their weakness from my eye. My victory was but half complete for when I sought to watch them feeding they shuffled round so as always to present to me their back view. Baffled in this, they drooped their heads, and drawing their wings round in front, completely screened

their food from my view. I resumed my seat, and from time to time one would gradually relax its plumage and tear savagely at its food but the slightest movement on my part caused it to resolve itself once again into an animated bell-tent of spreading feathers and remain motionless. I remember that at this critical period of the Eagles' training, according to Hamley, "Soult was at Gera," but for the life of me I have no recollection now of what happened to him after, although I can recall distinctly every movement of the Eagles.

Slowly but surely I obtained the mastery over them and at last they would not only feed in my presence but come to me for food and fly on to my gloved hand, holding a temptingly garnished falconer's "lure." Finally I was so confident of them that I ventured to release two on the Europa Flats and fly them to the lure. This I did with complete success and although it was anxious work, having regard to the peculiar locality, I feel convinced from their behaviour that I could have entered them to fly at rabbits without further trouble.

On my homeward voyage to England in the P. & O. ss. "Lombardy" in the following November I lost one of these birds in the most tragic manner. I had tethered it on deck under the lee of a skylight one afternoon and in my temporary absence a meddlesome passenger, endeavouring to clear the leash, which had become caught up, let it go! Even then the Eagle only moved a few feet across the deck. Just at this moment I returned and was about to take up the bird when another unspeakable passenger ran at it. Of course it rose and flew overboard. We were off Cape Finisterre at the time, and were steaming about eleven knots, with the wind two points on our starboard bow. The poor bird, after flying to leeward for a couple of hundred yards, swung round and made for the ship. But unused to flying, and being weighted by the long leather leash and

swivel, it could not overtake us and, after steadily following in our wake for a time, gradually sank lower and lower until it only cleared the curling crests of the successive waves. Eventually it sank into the trough of the sea just astern of us. It was a most pitiable sight and I was within an ace of following it overboard. Unfortunately I was too upset to report the matter to our good Captain Wyatt, who, as soon as he heard of the catastrophe some time afterwards, at once offered to about and lower a boat so as to try and pick the bird up. It was then, alas! too late. Even after this lapse of time it is most painful to write of this most pitiful scene.

THE SNAKE EAGLE (*Circaëtus gallicus*).

Next in point of size to the large White-shouldered Eagle among the various tree-nesting species which are found in Andalucia comes the Snake Eagle, known also as the Short-toed Eagle. It is a fine handsome bird and easily recognized when flying owing to its very white breast and under surface of wing which has earned for it the name of *Jean-le-blanc* in France. In Spain it is known as *culebrera* or the snake-hunter. The sketch at the beginning of this chapter is of a Snake Eagle I watched one day at fairly close range.

It is widely distributed throughout southern and middle Europe wherever big woods are found, arriving in southern Spain in considerable numbers during March and returning southward in September. According to my own observations, a few birds remain for the greater part of most winters in the sheltered glades of the cork woods of south-western Andalucia, but the vast majority, without question, migrate southward as soon as the autumnal weather causes the reptiles upon which they prey to retire to their shelters. It is a lazy bird when on the wing, save

when engaged in circling aloft in quest of food; and in its flight when disturbed, as well as in the softness of its plumage, it much resembles the Buzzards. On several occasions when out with the Calpe Hunt in the Cork Woods during the winter months, I have seen one of these big birds, upon some horseman passing close to a tree in which it was sitting, reluctantly leave it and flap slowly to another tree, perhaps only 150 yards ahead, which it would in turn quit when again disturbed, only to seek yet another perch not far off. The most striking thing about this species is, without doubt, the great size and rich yellow colour of its irides which almost equal those of the Eagle Owl in their brilliancy. The resentful look in the big flashing eyes of a wounded Snake Eagle is a thing not easily forgotten.

Some birds are very large I have seen a female which measured close upon 30 in. in length, and a span of whose wings was over 6 ft., yet this bird was under 4 lb. in weight, a good proof of the softness of their plumage, which causes them to bulk so large to the eye. They can at all times be easily distinguished from other large birds of prey by their long unfeathered tarsi. The species earned the name of Short-toed Eagle, by which it was known for years, from its remarkably small feet. Both foot and unfeathered tarsus are well adapted for seizing and holding securely the writhing reptiles upon which it preys. Its favourite food is the large Ocellated Lizard, as well as all sorts of snakes, and, as has been already said, the movements of this species, as well as of a host of other raptorial birds which seek their prey amid the teeming reptile life of southern Spain, are largely modified by the habits of the snakes, which are in turn influenced by the seasons and also by the weather.

Living as I do from autumn to spring in successive winters in Andalucia I see much of the ways of the larger reptiles. As a rule both large lizards and snakes are but seldom seen during

winter but any unusual rainfall and consequent flooding of the lower districts at once brings them to light. Thus during the very wet winter of 1907-8 I saw daily in December big Occidental L. [illegible] no longer of a brilliant metallic green with azure-spotted sides, as in the spring and summer months, but of a dull dirty brown and often caked in mud, clear proof both that they had been roused from their lairs by the inrush of water and also of the effect which an absence of sunlight has upon the hue of these vividly coloured reptiles.

On 28 December when lying up for Wild Geese on a promontory amid the waters of a rising *laguna*, I saw several big lizards and snakes basking on the sunny and sheltered side of the lentiscus bushes around me. They were in a semi-torpid state. But I was most particularly struck by the innate spirit of self-preservation, which under such unexpected and, likely enough, novel conditions induced them one and all to select places where projecting bough or pendent streamer of sarsaparilla afforded them protection from the sudden attack of Eagle, Buzzard or Harrier. With the return of spring and the general awakening of reptile life innumerable raptorial birds come streaming up from the African continent and the sight of them as they pass, either singly or in small scattered parties, almost continuously for days at a time, when the wind suits their purpose, makes one wonder where they can find sufficient food.

The nest of the Snake Eagle is remarkably small for so large a bird. Like all the raptores, when conditions are favourable it occupies the same sites year after year, but, unlike most of them, owing to the peculiar situations it selects, it cannot always reckon upon finding the remains of a last year's nest upon which to build a fresh one. The vast majority of nests I have visited, probably over 90 per cent., have been placed far out along an horizontal or even on a pendent branch of a cork-oak tree and it is obvious that nests in such situations are peculiarly liable to be destroyed by

the winter gales. When this occurs, the Eagles either build again in the same site or select some adjacent tree, for no amount of

NEST OF SNAKE EAGLE NEAR SUMMMIT OF CORK-OAK TREE.

bullying or interference would seem to cause them to forsake any particular locality which they have elected to make a breeding station. To such an extent do Snake Eagles at times carry this

habit of nesting at the extremity of a bough that I have been compelled to secure myself with a rope before crawling out along the slender branch supporting the nest. At times, nests placed in such situations become dislodged and fall to the ground. I knew of such an instance in 1906, when a nest placed at the extreme end of a pendent cork-oak bough gradually slipped through the supporting branches. So long as the old bird was sitting, the disaster was postponed although it was obvious enough that the nest might drop through at any moment. In due course the young bird was hatched out and with the increased weight as it grew larger the strain became too great and one day the inevitable occurred and both nest and young bird came to the ground. The distance was short, about 12 ft. to 15 ft. and no harm was done and the old birds continued to feed their offspring as it sat on the ground in the remains of its nest amid the gum-cistus bushes. The Snake Eagle is essentially a tree-nesting species, only once have I found a nest on a cliff and then it was built in the spreading boughs of an arbutus growing from a cranny in the face of the crag. Colonel Irby however once found a nest in Morocco in a lentiscus bush with its base actually touching the ground. Now and again I have found nests high up in the fork of a really big tree, secure from molestation save from one of the guild of inveterate birds-nesters who decline to admit that, given time and appliances, any tree is impossible.

Every nest I have visited has been constructed in exactly the same manner, the base of sticks and twigs and some dead leaves, lined with freshly cut green boughs of cork-oak or ilex. Some of the newly built nests are little more than a small platform of sticks, not 18 in. across, with a slight hollow in the middle. Nests of former years which have been repaired and added to are sometimes double this size and effectually conceal the old bird from view when sitting on her egg or young. When a nest

is sufficiently large to prevent the bird seeing the approach of any intruders, it will at times sit extraordinarily close and I have known birds refuse to leave the nest in spite of repeated hammerings on the trunk, perhaps not 20 ft. below it. Sometimes, indeed, nothing seems to dislodge them save a stick or stone striking the nest itself. This induces me to remark incidentally that in the case of all tree-nesting birds nothing is so effective as a means of ascertaining whether a nest is in occupation or not as a catapult and a supply of marbles, old sparklet capsules, or pebbles. By such means have I discovered the secrets of Hawks, Carrion Crows, Owls, Kites and other species innumerable.

The egg (there is only one) is usually laid, according to my notes, between 26 March and 16 April, and is invariably pure white and very round in shape. There are two types of eggs, one with a coarse granulated surface and the other very smooth. Some eggs are considerably rounder than others. The largest I have taken measured 2·85 in. by 2·4 in. and the smallest 2·8 in. by 2·25 in. It is interesting to note that although this species only lays one egg in Morocco, Spain and France and elsewhere in Europe; in India, according to Allan Hume, it usually lays two eggs.

Owing to their habit of nesting far out on branches, few Eagles' eggs in their nests are more difficult to photograph. For in addition to the awkward and frequently insecure position of the photographer, there is almost invariably some movement of the tree caused both by the wind and the extra weight of the climber on a resilient bough. Hence, no time exposure is as a rule possible. Added to these drawbacks, for some inscrutable reason Snake Eagles are most partial to building a nest on the western side of a tree. Such has been my experience. Of course the result is that in nine cases out of ten the sun will be found to be shining into the lens. Desperate cases require desperate remedies and I have sometimes been compelled to focus my camera at 18 in. distance and, holding it out on

the far side of a nest so as to face me but at the same time to ge the sun behind it, have made the exposure. Since it is, of cours

NEST AND EGG OF SNAKE EAGLE.

impossible to look into the finder in such a situation there is delightful element of uncertainty. Sometimes it has met with qualified success as can be seen by the egg figured at the

of this chapter. The picture on the preceding page is of a nest near the summit of a diminutive cork-oak which permitted of my getting a view of it from an adjacent branch.

EGG OF SNAKE EAGLE (*much stained*). (Size 2·8 in. × 2·3 in.)

I took my first egg of this species in company with Colonel Irby in 1877. On climbing to the nest I heard a faint cheep and became aware that it proceeded from the egg which was on the point of hatching. As the female had been shot, I took the egg, only to discover on our arrival at home at nightfall that the young bird had hatched out during the return ride.

Few Eagles are more faithful to a particular locality than is this one. Year after year they will nest in one of three or four sites in rotation, all situated close together. Should a tree be cut down they will select one close by and build a fresh nest. In spite of their comparative abundance I have never known of more than one pair being in occupation of the same wooded valley, although they seem to have no objection to the Black or Red Kites building in their vicinity.

YOUNG SNAKE EAGLE, AGED 1 WEEK.

The eggs very soon after they are laid become stained with the green leaves in the nest and also with reptiles' blood. It is a common thing to find the remains of a snake or lizard in the nest of a sitting bird.

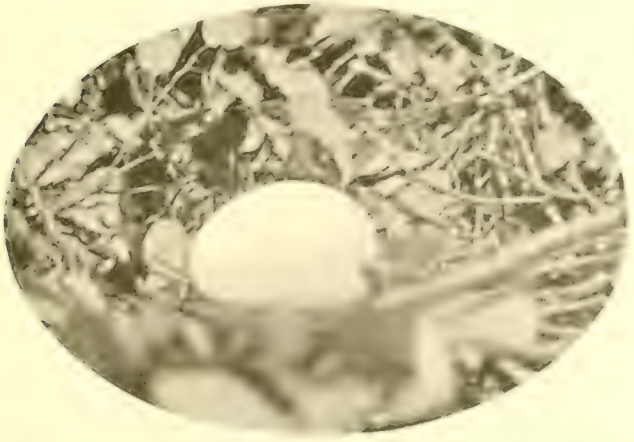
The young, on first emerging from the shell, are little more than balls of white down with very dark eyes and beak. The Eaglet here shown was photographed on 10 May, when just a week old.

As usual the nest was in a cork-oak which was swaying in the wind. Having taken the first picture apparently unobserved, I stooped down out of sight and prepared the camera for another attempt. Placing it on the edge of the nest I raised myself gently on the chance of not alarming the little fellow but he had detected my presence and turned on me furiously. It was comical to see such wrath and indignation concentrated in less than 4 in. of white down.

YOUNG SNAKE EAGLE, ANNOYED AT BEING PHOTOGRAPHED.

Kept in confinement this species soon becomes very tame and tractable, even when trapped as an adult bird. On 6 April 1879 when riding through a glade in a cork wood where these birds nest annually, a female came circling overhead, calling out sharply, as is their habit when their nest is approached. I could make nothing of it on this day, but subsequently found it about 300 yards from the spot where she had given the alarm. It contained one egg, rather set. This I replaced by a hen's egg and trapped

her entering the nest within ten minutes. She was a very fine bird and having secured her by throwing my coat over her I tied her up in it with my *faja* and rode homewards. The old male bird, who had evidently watched my nefarious proceedings from afar, followed me through the cork forest and out into the plain beyond for over two miles, circling high overhead and from time to time calling querulously. My bird soon became reconciled to her confinement and in less than three weeks would allow herself to be carried in falconer's fashion without any trouble. I eventually gave this bird to Crown Prince Rudolf, who took it with him in his yacht, the *Miramar* back to Austria and the last I heard about it, some years later, was that it was alive and well.



CHAPTER IV.

THE WHITE-SHOULDERED EAGLE (*Aquila adalberti*).

The largest tree-nesting Eagle. Means of identifying at a distance—Comparison with Golden Eagle—Perplexing changes of plumage—A nest in a marsh—Pugnacity of Eagles—Nest in black poplar—A bull-fighting interlude—"Mild-mannered" bulls and the reverse. Beautifully coloured eggs—Trapping an Eagle, a lucky escape—Food of Eagle—Habits—The "Black Eagle"—A Regimental Trophy.

IT is one of those curious anomalies so constantly met with where the habits of wild birds are concerned that in southern Spain where great cliffs abound which offer secure nesting-sites for Eagles, out of the five species of Eagles most frequently met with two, and two only, nest in cliffs the others invariably resorting to trees. And not only do they nest in trees but often in extremely small trees, in some cases only 15 ft. or so from the ground.

Foremost and largest among these tree-nesting species is the beautiful White-shouldered Eagle, or as it is also called, the Spanish Imperial Eagle, the western representative of the Imperial Eagle (*Aquila mogilnik*) of Eastern Europe. This bird in its structure, flight, general appearance and habits closely resembles the Golden Eagle. It is however of a lighter and less

WHITE-SHOULDERED EAGLE

Aquila adalberti (R. Brehm)

powerful build and somewhat smaller and, save in the case of very young birds, is easily recognizable by its white shoulders, whence the name.

When flying at a distance or high overhead it requires a quick eye to identify it and, personally, I am never satisfied when watching a soaring bird until I see it turn so as to show its back and upper wing-coverts, when the white shoulders, if present, at once show the species.

Broadly speaking, in southern Spain the Golden Eagle restricts itself to the higher sierras, where it seeks for its quarry on the open hillsides where trees are few and scattered, whereas the White-shouldered Eagle frequents the low-lying ground and is usually seen circling over the plains and marshes or beating along the low scrub-covered hills adjacent to them. But there is no hard and fast rule in the matter and I have from time to time found nests of the White-shouldered Eagle in secluded wooded valleys at a greater altitude than those of the Golden Eagle in cliffs in the same district.

Despite the resemblance of the two species when on the wing the Golden Eagle is vastly more powerful, especially in the legs, feet and talons. Thus an adult female's hind-toe claw measured along the curve $2\frac{3}{4}$ in. whereas a White-shouldered Eagle's was only 2 in. Again the claw of the inner toe of the Golden Eagle was $2\frac{1}{2}$ in. whilst in that of the White shouldered it was only $1\frac{7}{8}$ in.

This bird undergoes somewhat perplexing changes in its plumage. During the first year or two it is of a uniform reddish tawny colour, then follows an intermediate stage when the tawny is spotted with black and lastly, the adult plumage of a rich dark brown, so dark, indeed, as to appear almost black when on the wing. For a long time these immature tawny birds were supposed to be specimens of the Tawny Eagle (*Aquila rapax*), a smaller species whose habitat is Africa and it was Colonel Irby

who first pointed out the mistake. The white shoulders are apparently not acquired until the third year, but, as do some of the other raptores, these birds sometimes pair and breed in immature plumage. Dr. Stark noticed this in 1876 and I have heard of other cases since. In the perfect adult plumage some birds are intensely black and hence the species is widely known to all the country folk in southern Spain as *Aguila negra* = "Black Eagle." I have seen old birds which in certain lights looked as black and almost as shiny as a Raven.

I first met with this species in a curious and unexpected manner. In the month of May 1875 and in company with Fergusson I was hunting some beds of sedges in a marsh for nests of Savi's Warbler (*Locustella luscinioides*) when we chanced to see a big nest perched on the top of an alder tree some distance out in the marsh. On proceeding towards it, we found it was surrounded by a dense jungle of alders, sallows and cane-brake, the whole so matted and interlaced by long trailing briers and creepers as to be almost impenetrable. Below the trees the soft black mud was over knee-deep and at places were deep pools which we crossed by stepping along the gnarled roots of the alders and grasping from time to time a friendly branch or tree-stem. It was small wonder that the Eagles imagined themselves secure in such a fastness. Whilst struggling to force our passage through this labyrinth of water-plants, we were joined by two Spaniards who were engaged in leech-catching, and with their assistance we cut a path through the jungle towards the tree. On nearing the nest, which was less than 20 ft. from the water, a White-shouldered Eagle, which had been sitting close in it, raised itself and stood up in the nest. I had never seen a live Eagle of any sort at close quarters before and I regret to say that I shot her. The sketch at the beginning of this chapter of the nest in the dead alder tree is from one I made at the time

in my note-book. Thirty-three years have elapsed since I committed this wicked murder and all I can urge in extenuation of it is that in spite of numerous opportunities since then I have never again killed a White-shouldered Eagle.

Upon climbing up to the nest it was no easy matter to look into it, since it overhung the summit of the alder on all sides. Eventually I succeeded and found it contained a single white egg, smaller than a Marsh Harrier's. This, when I came to blow it, proved to be yolkless and of abnormal thickness and roughness of shell. As the old bird was sitting so close on this, I have no doubt that her nest had been robbed of the eggs or young some time before and that this abnormal egg had been left or been laid subsequently.

The nest was a great pile of big sticks and boughs and, was curiously enough, lined with goat's hair, lambswool and feathers, a fact I duly noted at the time, and, naturally enough, imagined to be in accordance with the usual custom of this species. The old bird, a female, was in the uniform dark brown plumage — not the black — and measured 34 in. in length, with a span across the wings of 80 in., her weight being 8 lb.

Two years later I heard from Colonel Irby that he had visited this same nest in 1873 and had watched a pair of Black Vultures repairing and relining it at the end of February. Colonel Irby further told me how, in 1874, the year before my visit, a pair of White-shouldered Eagles had occupied this nest and had relined it with fresh green boughs, in accordance with their usual custom; the nest when he saw it, contained no eggs.

The reason of this we learned from our Spanish attendant, Juan Palo, a famous old local sportsman well known to successive shooting parties from the Rock between 1869 and 1879. He told us how in this same year he had taken three eggs from this nest, and that one of them was abnormally small and resembled

the yolkless egg we had found. Since 1875 I have visited many nests of the White-shouldered Eagle, and every one of these, without exception, has been lined with fresh green branches of cork or wild olive. Hence I can only imagine that the nest we found had been repaired and lined by Storks.

The Eagles nested in the same tree in the marsh in 1876 and on several occasions I saw them circling above the plains near it. Later in the summer the old alder and a greater part of the jungle was destroyed by a big fire and the Eagles thereupon occupied an old Stork's nest in a lofty tree not half a mile from their old sanctuary. On 23 February 1877 when snipe-shooting I visited this spot. The tree was growing on the banks of a stream and close alongside a ford much used by peasants who tended the flocks and herds in the neighbourhood. It was a strangely frequented spot for Eagles to choose but they no doubt, relied upon the awkward nature of the tree. This, a fine black poplar with wide-spreading boughs, had no branches for some 12 to 15 ft., and was almost too large to swarm, its girth at over 5 ft. from the ground exceeding 70 in. Somehow I managed to get a grip of the bark and after a slippery scramble reached the lowest bough, after which my progress upwards was easy enough. On arriving at the great nest I experienced as before some difficulty in surmounting the edge, since it projected overhead like the top of a sailing ship. It was freshly lined with green branches but without eggs. As I had to return to the Rock next day I gave my henchman, Juan Palo, solemn injunctions to visit it later on. This he did, but was unable to climb the tree or find anybody who could.

My descent from this tree was marked by a ludicrous episode which it would be hard to experience in any country save Spain. I had just slithered down the big trunk to the ground and was in the act of picking up my gun which I had rested against a bush before my climb, when I was startled by a frantic yell from a

Spaniard and, on looking round, saw a young bull—a two-year old with short but sharp horns—coming straight at me. When I caught sight of him he was coming down the track leading to the ford and not ten yards from me and was closely followed by a mounted cattle guard armed with the usual long lance or *garrocha* who was riding his horse out for all it was worth in his endeavour to turn the young bull before it reached the ford. I made one bound at the tree and in spite of its size managed somehow to get a grip about 6 ft. from the ground but could do no more, not even turn my head. There I clung much as a cat does when hunted up a big tree by a dog and incapable of further effort. The bull passed close below me with a rush scattering mud and water all around and on gaining the open ground some 30 yards beyond wheeled round and came to bay. As his pursuer emerged from the scrub bordering the stream, the young savage made a gallant charge on him, but was turned easily by the sharp steel-pointed *garrocha*, which struck him at the correct spot high on the shoulder, upon which he galloped off, the horseman following in hot pursuit. Such scenes are of common occurrence in the wilder parts of Andalucia where it is the custom to keep the young bulls in herds until they are 3 years old. From time to time the owners have these herds closely inspected and subdivided for various purposes and on all such occasions the mounted guards with their long lances play an important part. During the process of "cutting out" some particular young bull from the midst of a herd it not uncommonly happens that it breaks away and has to be pursued and rounded in, and it so chanced that upon the day I visited the Eagle's nest one of the rebellious ones came my way. At this time a famous herd of bulls, a fighting strain known as that of *La viuda Varéla*, occupied this portion of the country and after sundry adventures and escapes we learned to regulate our movements and birdsnesting forays so as not to disturb the older

bulls, which alone were troublesome. Nowadays bulls destined for the Plaza are no longer herded in this district and their place has been taken by more peaceful animals politely described as being *mansos*, "mild-mannered" or "gentle," in contradistinction to their more formidable relatives who are known as *bravos*, wild or savage. But I am forced to say that this term is but a relative one, and from an intimate knowledge, at times far too intimate, of the ways and customs of Spanish bulls in the more remote parts of Spain, I would strongly recommend any wandering Englishman to give any he may meet a wide berth. Living as I do so much among these animals, I naturally enough have learnt how to carry on my own pursuits without annoying them. But it may be taken as an axiom that it is better not to approach any bull, no matter how "mild-mannered" he may be, if on foot. There is something in an Englishman's dress and voice which irritates the Spanish cattle; this, added to the peculiarly English habit of stopping and pointing a finger at an object of interest is calculated to upset the equanimity of the "mildest" bull. A fine seven-year-old bull, an old friend and neighbour of mine, who endured all such familiarities, and was reputed to be absolutely *manso*, was however unable to submit to the impertinence of being snapshotted at 25 ft. Luckily there was a wall hard by!

But I must return to my tree, where I left myself clinging. On descending from my uncomfortable perch I went to pick up my gun, but it was gone! I could scarcely believe my eyes for less than a minute before I had seen it peacefully resting against the bush. Since it was clear that neither the bull nor the man had carried it off, I surmised that somehow or other it must have fallen into the stream hard by. There was a deep pool close to the bole of the tree and so, wading into this, nigh waist-deep and feeling with my feet, I eventually trod on something hard which proved to be the gun, It was evident that the bull as it rushed past me,

had artistically "flicked" the gun from its position with his horn. Fortunately he was too much occupied to pay any attention to me. My shooting companions, who had been lunching in a place of safety 100 yards from the tree and who had a full view of the exhibition I had so unexpectedly provided for them now joined me and were naturally much amused which was, considering the condition of my gun and myself, more than I was.

Early in February 1878 I saw this same pair of White-shouldered Eagles building a big nest in another small alder tree in the great marsh not far from the first nest I described. From this three most splendidly marked eggs were taken, of which one was unluckily broken. As a general rule the eggs of this species are usually white with a few faint rufous marks. But on no less than three occasions I have obtained beautifully marked eggs, richly clouded with purple and spotted and blotched with rufous brown. In size they are as a rule, decidedly smaller than those of the Golden Eagle, the largest I have ever taken, measuring 2·9 in. by 2.3 in. All the same some Golden Eagles' eggs are smaller than some of the larger eggs of the White-shouldered Eagle.

Upon showing my coloured sets of White-shouldered Eagles' eggs to the late Mr. Henry Seebohm, so convinced was he from their size and markings that they must belong to the Golden Eagle that he urged me over and over again to re-mark them as such. Since, as this account shows, I was well acquainted both with the Eagles which laid the eggs and with all the circumstances of their nesting, I naturally enough steadfastly refused to do this. It is a good example of the perils which beset any attempt to identify eggs by their markings and size and has made me ever since view all collections which have been rearranged by so-called experts with suspicion.

In 1879 these Eagles nested in the big tree of 1877, whence I

obtained two very finely-coloured eggs. These I gave to the late Crown Prince Rudolf.

It is now thirty years since I have molested these Eagles. During that time the deep morass I describe which served as a regular paradise for Savi's Warbler and other birds of similar habits has been drained and the dense jungle cleared away and the whole country become much more frequented. The Eagles have however remained faithful to the locality and from time to time I have seen them sailing overhead. In 1907 I spent a day at the old spot and was rejoiced to find that they were still nesting in the vicinity.

I will now give my experiences of another pair of these grand birds which have nested to my knowledge in the cork-oak trees in one of the great ravines in the sierra for thirty-five years. I first saw them in 1875, but five years passed before I got their eggs, a handsomely-coloured pair, in March 1880. Fourteen years passed before I was once again in this same valley and there, sure enough, were the Eagles nesting peacefully in a cork tree not 30 ft. above the ground. This nest was the largest I ever saw measuring 8 ft. 6 in. by 5 ft. and was evidently the result of many years' work, the newer and inhabited portion being built on the edge of a former nest which had slid from its position, hence the elliptical shape. It was lined with masses of freshly cut cork-oak branches and contained two eggs, hardly marked at all, in fact, of the normal colour. At the time I was anxious to secure a live Eagle of this species, so having replaced the eggs by a couple of fowl's eggs, I set my trap—a circular pole trap without teeth and with the jaws well padded with chamois leather—at the spot where the Eagle entered the nest. According to my usual custom the trap was secured by about 30 yards of stout line to a dead bough which lay on the ground below the tree. Concealing myself in some high heather about 300 yards distant, I waited on events.

Very soon the female Eagle returned and, alighting on the edge of the nest, walked in. Next minute she dashed off, and for a second I imagined that she had seen the trap and taken alarm. Not so, however, for after flying about 25 yards, she began to flap heavily, and then, losing her equilibrium, fell downwards. Rushing

NEST OF WHITE-SHOULDERED EAGLE IN SPANISH OAK.

up to the spot, I found her dangling, some 6 ft. clear of the ground and held in the trap by one foot. As I closed on her I endeavoured to tear off my coat to throw over her, but missing my footing took a tremendous fall heels over head among the rocks and heather. When I recovered myself and looked up, she was gone!

Apparently my near approach caused her to make a supreme effort to free herself and free herself she did and got clear away unhurt. Although at the time I was sorely disappointed, I have never since ceased to be glad that she escaped me. In fact I can hardly realize now how I could ever have attempted such an act of cruelty as trapping an adult bird accustomed from its earliest days to roam above that glorious country.

This Eagle was in the normal adult plumage, very dark brown all over, save for the nape of the neck, the white shoulders and the richly barred tail of greys and browns. Its mate, which I constantly watched perched on a rocky summit hard by the nest, was, on the other hand, of sheeny blackness.

The pair still frequent the same district and I have seen them in occupation of four alternative sites, all in the same valley, and all in cork-oak trees varying in height from 15 ft. to 30 ft. I have only once molested them since 1894, when the nest contained three dirty white eggs, much stained with yellow (which I take to be from the fresh green cork-oak leaves), and with a very few faint red markings. One of these eggs had been perforated by the Eagle's sharp claws, a not uncommon occurrence with eggs of raptorial birds.

Their favourite food is hares and rabbits, they also take Partridges and other birds. In one nest I found a Green Plover whilst Dr. Stark found a nest containing the remains of no less than seven rabbits, three Partridges, and a Black-winged Stilt. When lying up for geese and duck during the winter months I have constantly seen them hunting over the *lagunas* and swampy lands adjacent, but I have never had the good luck to see them pursue or capture any waterfowl although their appearance always seems to strike terror into the big flocks of Wigeon and Teal, causing them to rise with a roar of wings and settle again.

Being essentially birds of the plains, they are much addicted

to alighting on some stone on the summit of the low undulating hills bordering on the marshes, where they remain motionless for an indefinite period, prior to resuming their circlings overhead. Only last November, when riding across some hills on my way to shoot Snipe, I saw one in such a situation, and so intensely black did it appear in the sunlight that until I got out my field-glasses, I imagined it to be a Raven! Simply as a matter of curiosity I tried to see how near I could approach it, by means of the old scouting stratagem of pretending not to notice it so long as I was in view, and, when once out of sight under cover of a fold of the ground, galloping my horse straight for the spot. The ruse was successful, and so completely deceived was this most wary bird that I rode within 30 yards before it saw me. It was blowing half a gale at the time and the Eagle having to rise against the wind came flapping within 15 yards of me. It was truly a magnificent sight to see such a splendid bird thus striving with the elements at such close range. In the brilliant sunlight, the light golden of the neck and the snowy whiteness of the shoulders formed a striking contrast to the rich black brown of the back and wings. Small wonder is it then that the Spaniards all know it by the name of *Aguila negra*, the Black Eagle.

Amid the sierras, the Golden Eagle, which also looks dark when on the wing, is known by this name, whilst in the regions where both species are found, the addition of *de los arboles* (of the trees) and of *de las rocas* well describes their normal habits, whilst now and again I have met country folk who were sufficiently acquainted with both birds to describe them as *Aguila imperial* and *Aguila real*.

As a naturalist it has often struck me how every nation is addicted to dubbing birds and animals red, black, or white, irrespective of their actual coloration. No doubt such descriptions are derived from mere heraldic expressions which are paralleled in our language by the Red, White, or Black Lions of our hostelries

Everybody has heard of the Prussian Orders of the Black and Red Eagle and of the difficulty certain folk have to avoid one or other of these honours, which according to report is only equalled by that of escaping death. But in some parts of Europe the existence of a real Black Eagle not merely of an Eagle which in certain lights and in a certain condition of plumage has a black appearance is with many an article of faith. Nowhere is this more implicitly accepted than among the ranks of a certain regiment in our Service, which was awarded as a distinctive badge a "Black Eagle" of heraldic fame, in recognition of its services.

Many years ago I chanced to be dining with this regiment and, as ill-luck would have it, was asked if I had ever met with the famous Black Eagle during my ornithological researches. I was obliged to say "No," and weakly added that I had never yet made out what bird had given rise to the heraldic title. The officers hastened to assure me that the Black Eagle was a well-known although extremely rare species only to be found in a remote part of the Carpathians and that their late colonel had gone to immense trouble and expense to obtain a specimen to present to the regiment. Soon the mess sergeant appeared bearing a framed and glazed case in which was an embroidered satin cloth bearing the "Honours" of the corps and in the centre a most imposing black bird set up in heraldic style with wings outspread on either side of its head and legs and feet in the approved attitude. Black it was most certainly, inky black, in fact, there was a great deal more black than of eagle about it. Suffice to say that the wily purveyor of this weird and hitherto undescribed species had obeyed the peremptory military order of the colonel to provide him at all costs and without delay with a Black Eagle, by artistically attaching a pair of Raven's wings, legs and feet to the head of a hideous Egyptian Vulture which he had dyed black as a coal. There was no possible escape from it.

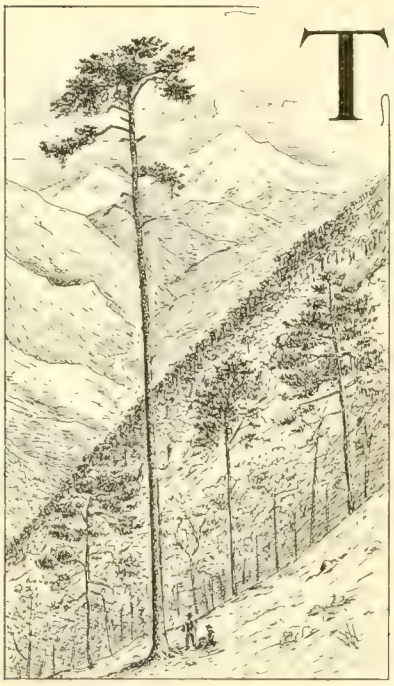
Some of the most conspicuous and unmistakable external characteristics of the Eagles are their oval nostrils, feathered legs and long powerful claws, but here was the loathsome white Vulture, so well known to all travellers in the East, defiantly parading its peculiarly elongated beak with narrow slit for a nostril, whilst its partner in the deception, the Raven, unblushingly exhibited its shiny black bare legs and short blunt claws.

I sometimes wonder how far the resourceful provider of this unique species penetrated into the Carpathians!

CHAPTER V.

THE BLACK VULTURE (*Vultur monachus*).

The largest tree-nesting raptorial bird—A difficult stalk—Size and weight—Seeking the nest—Expedition to Old Castile—Great pine forests—A prolonged search—Find a nest—An awkward tree—A repulse—Doroteo the woodman—Return to the attack—Ascent of tree—Marvellous rope work—Find a second nest—An interesting ascent—Description of nest and egg—Photographing with "fixed focus" hand camera.—On the tree-top. How the distance was obtained—Find a third nest—Tree 130 ft. high—Kite flying as a means of reaching nests—Captain D'Arcy Irvine's line-throwing gun—A ride through the pine forest—Los Siete Picos—Puerto de Guadarrama.



THIS majestic bird is perhaps the best example of the paradoxes which so often confront the students of wild birds in their haunts.

The popular belief that all the great European Vultures habitually resort to cliffs for their nesting-stations is in the case of the Black Vulture rudely shattered. For although the majority of Vultures do certainly nest in cliffs, the Black Vulture as regularly resorts to trees. In Europe the Griffons invariably nest in cliffs, as do the Bearded Vultures, and the Neophrons (or Egyptian Vultures) usually resort to the cliffs. But the Black Vulture is

PLATE XLII.

Vultur monachus (Linn.

always a tree-nester. In situations which favour the species, such as the great pine woods of Central Spain, it commonly selects some tall tree on which it constructs a great fabric of sticks and boughs. But, failing big trees, it will resort to smaller ones, and I have myself seen one in a stunted alder tree not 20 ft. above the ground, and have heard, on the excellent authority of the late Dr. Stark, of another in a small cork tree at about the same height. The Black Vulture, whether by nature of its sable plumage or general appearance, always gives one the impression of being somewhat of a higher-class bird than the Griffon. Its head, although not feathered, is covered with close-growing dark brown down, which, combined with its dark ruff, gives it something of the appearance of wearing a friar's cowl, hence its name of *monachus*. The result is that it is less repulsive than is *Gyps fulvus*. It belongs to the family of the true Vultures, whereas the Griffon is merely a poor relation of these more august birds. Still, it cannot be denied that in habits and customs there is nothing whatever to choose between them. In fact, the Griffons, in the southern part of the Peninsula, and the Black Vultures, which are found in their greatest numbers in middle Spain, carry out identical duties in the necropolis line in the regions they respectively occupy.

The first time I set eyes on a Black Vulture I was riding across the great plain of La Janda on an autumn day and became aware of a bevy of Griffons engaged on the carcass of a horse, among them I saw what I imagined to be a Raven. As I drew nearer, a fracas arose among the big birds and they scattered outwards whilst my supposed Raven was left in possession of the carcass, and I then saw it was a huge Black Vulture. Reining up, I watched the Griffons closing in around and each time they interfered with the solitary black bird it made a lunge at them and drove them back. I rode close enough

to see the sable plumage and great size of the bird in contrast to the two dozen or so of Griffons around him before they all took wing.

At the time I was ignorant of the existence of the species, for they are rarely to be seen in south-western Andalucia. Since then, from time to time I have come across them in that region but, so far as I am aware, there are only one, or at most two, pairs which thus venture to intrude upon what is universally admitted by the well-regulated laws of Vultures' society to be the freehold property of *Gyps fulvus*.

Two years after this my first sight of the Black Vulture, I was shooting duck down the banks of a river when I sighted a huge black bird in the open plain, some hundreds of yards distant. The plain was absolutely level and had been recently ploughed up and it was clearly impossible to find any cover to aid me in getting within shot. After lying down and watching the bird for some time, I noticed that it was facing the wind and seemed to be intent on some object to its front. The idea struck me that possibly I might be able to approach it from behind and so I retraced my steps along the river bank until I arrived at a point exactly down-wind of the great bird and some 300 to 400 yards from it. Lying down, I commenced a long and exhausting stalk, ever keeping my eye on the bird and when it turned its head, which it did at intervals, lying prone and waiting on events. Finally I got within 40 yards before it detected my presence and, as it rose, I gave it two barrels of No. 4 shot. By chance I severed some tendon in one of its great wings, for it crashed down and after striking the ground recovered itself and set off to flap away across the plough-land. Then ensued a rare chase, I following in hot pursuit and firing ineffectually at it from time to time. At last it stopped and turned, and as I closed on it it made a gallant attempt at a charge. It was an immense female,

dark brown above with richer browns on its wings, the big primaries and tail feathers being brownish black. It weighed 18 lb., being 45 in. in length with an expanse of wings of just under 9 ft. I skinned and preserved this bird and have it now stuffed in my house. It was fasting when I shot it, and so its seeming lethargy was not due to a recent heavy meal as might have been imagined. Rather would I attribute its allowing me to creep up within shot to the fact that a westerly gale was blowing and the bird had alighted to rest in the middle of the great level plain and suspected no danger. It was the first and last Black Vulture I ever shot at.

In Spain the Black Vulture always strikes larger on the eye than does the Griffon and as far as my observation goes, it always is a larger bird, being several inches longer and with a wider expanse of wing. On the other hand, according to Colonel Irby and others, in India the Griffons are of a larger race than those in Spain, whilst the Black Vultures are of the same size as those found in Europe.

Allan Hume, in his "Notes on Indian Birds," is one of the very few writers on ornithology who has placed on record the sizes and weights of the birds he has described. I would commend a study of this book to all sportsmen or naturalists who are interested in the size and weight of birds.

Hume gives the weight of the Black Vultures in India as from 12 lb. to 20 lb., with 14 lb. as an average; this is much the same as that of the Spanish birds. Nevertheless it has been stated that in Spain they have been shot "weighing between 2 st. to 3 st." (28 lb. to 42 lb.), but in justice to those concerned it must be admitted that the weight thus given was merely "estimated."

The average expanse of wing of these fine birds is from 8 ft. 6 in. to 9 ft. Hume records a big female of 9 ft. 10 in.

The term "Black" Vulture, although quite appropriate to the birds when in their haunts, is by no means borne out by those often seen in museums. The young birds are very dark, so dark indeed at times as to appear at a distance as dark as Ravens. As they reach maturity they gradually grow lighter until old adult birds are quite light cinereous brown, especially on their shoulders and scapulars.

To visit the nest of the Black Vulture was for many years one of my most earnest desires. So far back as the spring of 1875 I came across a disused one.

This nest was destroyed in a great fire, as described in the last chapter, the following year. The Black Vultures thereupon moved to a small cork tree in the adjacent sierra.

Afterwards from time to time I came across one of the birds, now sitting out in the plain or perched in a cork tree in company with Neophrons and, once only, on a crag in the remote sierras. But I could not locate the nest. Eventually it became evident that if I intended to take with my own hands the egg of this species I must seek for it in the districts of Spain where it was most commonly to be met with. As events proved, it was fortunate that I did so.

It was in the spring of 1899, when serving on the Staff at home, that I managed to get two weeks leave of absence on "very urgent private affairs" and the question arose how best to employ the precious hours at my disposal. After much consultation with Colonel Irby and Dr. Stark, and reference to Lord Lilford's notes, I came to the conclusion that my best chance was to strike straight for Old Castile, where on the pine-clad slopes of the mountains the Black Vulture was known to nest. There was no time for paltering with coasting steamers and having secured a companion I set off across Channel *via* Paris and Irun, for Segovia.

The extensive mountain range, known as the Sierra de Guadar-

rama, which runs east and west some thirty miles north of Madrid, was the scene of our operations. The lower spurs, especially those on the northern side, are covered with vast pine forests extending for many square miles. At the time of our visit there was still a great deal of snow on the whole mountain chain, but the weather was beautifully fine and the sun not too hot: in fact, the climate, at an elevation of 3,000 ft. to 5,000 ft. above the sea level, the usual height for our expeditions, was as near perfect as possible.

The forests we explored are Crown property, and are most carefully guarded and administered by a regular corps of forest guards. They are dressed in a very smart dark brown uniform with scarlet facings and silver buttons, their wide-brimmed sombreros being adorned with the silver cockade of the Royal Family. They are all mounted and carry a small-bore carbine in a bucket on the off-side of their saddles, and on the near-side a heavy woodman's axe, used for blazing trees.

The methods of forestry in these districts are simple enough, and, like most Spanish systems, are based on leaving Nature to do as much as possible of the work. As the pine trees grow up, the lower branches are lopped off at about 6 in. to 1 ft. from the trunk with the result that thousands of pines of all sizes are to be found, with stems of marvellous straightness and free from branches.

Since the Vultures affect the largest trees and generally those with tall, branchless trunks, difficult to climb, it follows that sooner or later the day comes when the woodman places the fatal "blaze" on the stem of some proud monarch of the forest which has afforded a safe asylum to the great birds of prey for scores of years. And so, year by year, the older and more favourite nesting-places of the Black Vulture are destroyed and the birds are forced to seek fresh sites in other districts.

Having established ourselves in quarters some miles from

Segovia, and well up in the sierra, we set to work to make the best of the time available—one week only—before returning northwards. One morning early in April we started on horseback with our local guide (a woodman), in quest of the coveted nest. We had already experienced several defeats, having for three days unsuccessfully explored various portions of the forest adjacent to our quarters. After following the high road for a couple of miles, we struck to the right through a small village. Beyond this we entered the oak-scrub, which covers the low foothills in this region. It was a delightful morning, cool and fresh, although the sun, even at 9 a.m., was warm enough on our backs.

After ascending for about 1,200 ft. we struck into the *pinar* or pine forest. This, like most forests of a like nature, has very little undergrowth; hence movement is possible in every direction, save where the steepness of the ground or some outcrop of rock or mass of detritus from the crags above renders a detour necessary.

The utter absence of all life in these great forests is very remarkable and must impress even the least observant. The only small birds seen were the Chaffinch and Great Titmouse. From time to time the sharp cry of the White-shouldered Eagle or the querulous call of a Buzzard or Kite broke the silence. Now and again a roe-deer might be seen watching us from a distance before it darted away noiselessly through the labyrinth of great pine trees.

After following a track for some miles we came to a valley where the *guardas*, or Royal foresters, had reported Black Vultures to have nested in former years. We now spread out to about 200 yards apart and rode silently through the wood, carefully examining the tops of the larger trees for nests.

Fortune shortly favoured us, for suddenly our woodman, who rode in the centre between us so as to indicate the direction of our advance, gave the pre-arranged signal and on joining him we

found he had dismounted at the foot of a fir tree, one of the largest in that portion of the forest. It was well over 100 ft. in height and at the summit was an immense nest of sticks. A glance showed us that it was a nest in occupation, for it bore unmistakable signs of recent repairs and additions, well known to those experienced in the manners and customs of the great raptorial birds. But the next question—by no means easy to answer—was whether it was merely repaired ready for use or whether it already contained the much-desired egg, for Black Vultures, like Griffons, only lay one egg.

Having picketed the horses and ascended the steep hillside until the great nest was very little above our level, we proceeded to make a careful inspection of it. My companion, who carried a powerful binocular telescope, soon called out that he could see a "yellow thing" in the nest, which he declared seemed to move upon the trunk of the tree being vigorously struck with an axe. Sure enough the yellow thing proved to be nothing less than the crown of the head of a Black Vulture. A few more vigorous blows of the axe caused the bird to take alarm. Raising herself in the nest she opened her wings and sailed away. So far our search had been successful for it was now quite clear that the nest was occupied. The next thing was how to get up to it?

The tree was about 8 ft. in circumference at the height of a man above the ground and grew smaller imperceptibly. No sound branch broke the smoothness of the trunk for over 90 ft. but at little over half that height the decaying stumps of branches projected for a few inches from the bole at rare intervals. These were so small and apparently so rotten that we disregarded them and concentrated all our energies on endeavouring to throw a light line over the lowest sound branch. After an hour's ineffectual struggles, in which our most powerful casts were hardly two thirds of the height, I was compelled to abandon the attempt and acknowledge myself

fairly beaten. What that meant to a keen ornithologist, who had for over thirty years been accustomed to climb to and take every nest he wanted, no words can describe. Whilst we were engaged in these futile efforts, the old Vulture returned several times and swept past the nest not 50 yards above us.

Knowing that the woodsmen were in the habit of climbing the trees when engaged in lopping off the lower branches, I besought our guide to find me one who could escalade the big pine, which

BLACK VULTURE LEAVING NEST.

had, so far, baffled all our endeavours. This, however, was without avail, for he roundly declared that no living man could climb such a tree. Remonstrance was useless, and my assurances that, if he could only find a man who could throw a rope up, I would myself gladly ascend, were received with the response that if I did such a foolish thing I would be most certainly killed, and that he would be no party to the affair. Our return march that night is one of the things one would gladly forget. I had embarked on a

journey of some 2,000 miles with the definite purpose of taking the egg of the Black Vulture, and here I was in the wretched position of having found the nest and seen the bird, knowing well that the nest contained the object of my desires, but baffled by a wretched pine tree. Horrible misgivings as to whether it was really such an impossible tree would persist in intruding themselves upon my mind.

As a forlorn hope on my return to our village that night I sent round word that I wanted a man who could climb a *pino* which was reputed to be unscalable and that a suitable reward would be bestowed on anyone who could do it. After a truly miserable night, during which dreams of impossible trees with rotten branches and of inadequate ropes which at intervals landed me in appalling situations, made any attempts to sleep almost unendurable, I got up at dawn and made some cocoa for myself and comrade.

Whilst completing preparations for our start I was agreeably surprised to receive a visit from our guide of the previous day who said he had found a man who could climb any tree in the *pinar!* The latter was at once introduced—a hard-faced and somewhat well-fleshed individual of any age between 25 and 50. He told me he was a woodman who had been engaged in lopping the pine-stems since he was a child. His name was Doroteo. To my anxious query as to whether he could pass a rope over the branch in the Vulture's tree, he made the truly Spanish reply of *Puede ser*, "Maybe." The still more aggravating national response to my question as to whether he could climb the tree (which he professed, by the way to know well) was, *¿ Que sé yo ? Veremos.* "How can I tell? We shall see."

Arrived at the scene of the operations of the previous day, I sighted my camera on the nest, whilst Doroteo made the woods resound with blows from his axe on the great tree. Soon the old

Vulture took alarm and launched herself from the edge of the nest, my camera duly registering her in the act.

And now began a performance which for skill, nerve, daring and readiness of resource I have never seen surpassed. Taking a 100 ft. length of my Alpine rope ($1\frac{1}{2}$ in.), Doroteo, by a skilful cast, hitched it over one of the small rotten-looking stumps projecting from the trunk some 30 ft. above the ground. Holding one end firmly, by a neat underhand throw he caused the

DOROTEO REACHES THE FIRST STAGE, 40 FT. FROM GROUND.

rope already hitched overhead to run up the trunk and catch on a second stump some 6 ft. above the first. Then walking round and round the tree with the ends of the rope in either hand and carefully studying the shape of the stem and the relative positions of the stumps above, he slowly and surely, by a succession of the most artistic jerks and casts, caused the rope gradually to creep up the huge bole, like a thing of life, until it was securely looped over a stump, about 6 in. in length, over 48 ft. above the ground. I men-

tion 48 ft., for I noted at the time that there was under 1 yard of the 102 ft. of rope (doubled) left in Doroteo's hands.

This was the conclusion of Act I.

Act II. commenced with a careful testing of the strength of the stump on which the rope now rested, by means of a steady pull and a few sharp jerks. After this Doroteo gravely handed the two ends to our other man Augusto and proceeded to pull off his boots and replace them by a pair of *alpargatas* or rope-soled canvas shoes.

Our woodman, Augusto, now weighed down on the rope with all his strength whilst Doroteo, moistening his palms, ascended it hand over hand with his legs around the tree in the most approved fashion until he reached a small stump about 40 ft. from the ground and a few feet below the one over which the rope was hitched. Standing now erect on one foot on this precarious support, and with the left arm round the tree so as to steady him, he carefully overhauled the rope until only a few feet remained overlapping the branch above. Next, by an adroit twist, he jerked it off this branch and proceeded to arrange the portion of rope in his hand into a loop some 15 ft. in length.

These proceedings we watched from below with breathless interest, for it seemed physically impossible for mortal man to ascend any higher owing to the thickness of the trunk, which, even at that great height from the ground was far too big for any man to swarm.

Doroteo, having arranged the rope to his satisfaction, now manipulated the looped portion as does a sailor when about to heave the lead from the chains of a vessel, and having by this means got on a sufficient swing, he cast it upwards at a small stump some 12 ft. above him. The cast failed—by an inch apparently! Again and again he gathered up his rope and essayed to throw it up, but without success. It was only too

clear that he was getting pumped, for the expenditure of energy on the part of a man thus balanced on one foot only, in such a situation, and using all his strength, is very great.

Just as we were in despair as to his ultimate success the rope, which he had kept circling round and round, struck the bough, and the loop overlapped, it hanging down a foot or so. To us below this seemed to be a failure only in another form, but we were vastly mistaken. Letting go one portion of the rope he

DOROTEO NEARING THE NEST.

grasped the other as low as he could reach, and by a combined turn of the wrist and upward jerk, as impossible to describe as it would be to imitate, he deftly made *one* part of the loop "flick" off the end of the stump, thus causing the bight of the rope to remain securely looped round it.

After testing the strength of this new point, he grasped the two portions of the rope and climbed up as before. Repeating this extraordinary process once or twice again, he at last reached the

lowest branch of the great tree. Here, after carefully securing his rope—for without it his return to earth, save in the form of a meal for the Vultures, would have been improbable -he leisurely climbed up the remainder of the tree and reached the nest. The enormous size of the latter can be realized by noting the figure of Doroteo in the accompanying photograph. In fact it was no easy matter for a man to get into it, since it overhung on every side some 3 ft. or 4 ft. However, by breaking away a portion immediately above him he at last effected an entrance, and shortly afterwards we had the satisfaction of seeing him hold up the well-won egg for our inspection.

I was anxious to follow Doroteo up the tree with the aid of the rope and photograph the nest, but was dissuaded by my comrade, who wisely remarked that the tree was very unsuitable for photographic work, and that in all probability we should find another nest where a hand-camera with a non-focusing lens, such as I then carried, could be used with better effect.

We now sent up a bag containing a tin box, in which to pack the egg safely. It speaks for the height of the tree that 102 ft. of rope only just sufficed to lower our prize. Doroteo now effected his descent in the same splendid style in which he had previously ascended.

Mounting our horses, we proceeded along the steep declivities through the apparently interminable maze of pine trees in quest of more nests. Nor were we disappointed, for within a mile of the first nest we came upon a second, placed on the very summit of a pine tree, the top of which had been apparently struck by lightning, or broken off during one of the furious gales which sweep the valleys of the Sierra Guadarrama in winter-time. Whatever the cause, the result had been to form almost an ideal spot for a big nest, the branches of the great pine spreading out and offering convenient support to it.

So steep was the hillside along which our horses were picking their way that we could easily see the old bird sitting on the nest on a level with us, and not 100 yards away. This tree was somewhat easier to escalade than the first one and before long we had a rope securely passed over a bough about 40 ft. above the ground. With the aid of this I was soon able

AUTHOR IN BLACK VULTURE'S NEST.

to ascend the otherwise unclimbable portion of the tree. Doroteo, to whom such exercise was a matter of daily routine, accompanied me and suggested that he should save me further exertions by ascending to the nest. This proposal naturally did not commend itself to me, as my primary object was to take an egg myself.

Leaving my satellite at a convenient point, I made my way up the limbs of the pine, smooth and slippery with the sun of

hundreds of years. Arrived at the nest, a brief scramble brought me over the edge of the great platform of big sticks, and I saw before me the object of my travels—a Black Vulture's egg! The nest was about 7 ft. in diameter with a good-sized depression in the middle, lined with tufts of fine grasses, such as commonly

NEST AND EGG OF BLACK VULTURE.
From a photograph at about 7 ft. distance.

grow on stony hill-tops in Spain. In the centre of the hollow lay the egg, whitish in ground colour and marked with dark ferruginous spots, the possession of which had been my desire for so many years.

I climbed on to the nest and had a good look round and it was interesting to note what an extraordinarily commanding site the

Vultures had selected for their nest. So strongly was the big nest built that it was an easy matter to stand on it, although the slight oscillation of the tree made it somewhat awkward. My friend took a shot at me with the camera at the moment when I was triumphantly holding up the egg for him to see.

Sending down the line I had brought up with me, I hauled up my camera. The difficulty which now presented itself was to get at a sufficient distance to work with the non-focusing lens. For this I required at least 7 ft. but from my position at the edge of the nest the utmost distance I could get from the egg was only 3 ft. Looking around, almost in despair, for some means of increasing my distance, my eye fell on a branch which, starting from the main trunk only 3 ft. below the nest ran out almost horizontally. Not only did this branch thus afford a conveniently situated foothold, but it ran in the direction of the sun. In other words, if only I could work out along it for 5 ft. to 6 ft., I would be able to take a photograph of the egg with the sun behind me.

The branch itself was none too large to stand upon, about the thickness of a man's thigh at first, but it rapidly got smaller, about 6 ft. out dividing into two branches, which drooped downwards. I saw that if I went out along it more than 2 ft. from the nest I should have no handhold to depend upon. Clearly the only possible chance to work out along it with reasonable safety was to bring a rope into play. Here again luck was on my side, for projecting through the nest was a gnarled stump, evidently a portion of the top of the shivered trunk. I was still wearing my canvas sling round my body to which was attached my Alpine rope as a life-line in case of a slip. I now passed a bight of my rope round this stump, and gaining the branch, I stepped *very* cautiously backwards, paying out the rope with one hand and with the other keeping my balance by a light touch on the edge of the nest, so long as it remained within reach of me. When less than 6 ft. from

the egg the bough began to bend under my weight, and realizing that it was unsafe to go out much further without being secured, I returned and measuring 3 ft. more along the rope so as to give me the legal minimum, viz., 7 ft., I made it fast at this point

BLACK VULTURE LEAVING NEST.

to my canvas sling. Then, gently withdrawing my "Bull's-eye" from its leather case and hanging it round my neck ready for action, I again edged out backwards, taking the strain on the rope slowly and steadily until it became taut. I was now over 7 ft. from the egg. It was a breathless moment as I pressed

the camera against my chest and pulled over the lever. In order to make sure of my task, I repeated the whole process thrice and was fortunate enough, in one case, to get not only a picture of the nest and egg in the foreground, but of the snowy summits of the Sierra de Guadarrama in the far distance beyond. It is unnecessary to expatiate upon the relief it was to regain the nest and once again to feel something firm to hold on to. I now descended, and we ate our luncheon at a point about 100 yards from the tree. During this time the old Vulture returned and proceeded to sit diligently on the empty nest as though her egg was still in it. On going towards the tree again, she rose up in the nest, and, extending her great black wings, sailed away. I obtained a photograph of her at this moment, the nest and bird standing up in good relief against the snow-clad slopes of the Sierra on the far distant side of the valley.

Before leaving the district we came across several other nests only one of which was tenanted. This was at the summit of one of the loftiest pine trees I have ever seen, by rough measurement over 130 ft. in height. A sketch of this tree, taken on the spot, appears at the beginning of this chapter. For over 60 ft. there was no friendly stump over which to cast a line, and the first sound branches were well over 100 ft. from the ground.

We found this nest by watching a valley on the south-western slopes of the Guadarrama from a point high up on the hillside, considerably above the level of the nest. With my telescope we watched both old birds enter and leave it, but the distance was too great to make sure whether it contained an egg or not.

From the movements of the birds it seemed as if they were still engaged in preparing the nest for laying, and, subsequently, we made our way to the foot of the tree. Owing to the great girth of the trunk of this pine, and the absence of branches, Doroteo at once declared the tree to be, without question, impossible, and

we did not even attempt it. And impossible it doubtless was from his point of view, and a more intrepid and skilful tree-climber I never met.

Owing to the somewhat lonely position of this tree, given a fair wind, it would be quite possible to get a line over the top of it by means of flying a kite, and had we remained in the neighbourhood a few days longer I should assuredly have tried this. To those who have not heard of it I may say at once that the idea is not original. I first obtained it, many years ago, from reading how a British Bluejacket, during our occupation of Egypt following on the campaign of 1801, succeeded in climbing Pompey's Pillar at Alexandria by such means.

This kite-flying method of getting a line over an awkward tree is, of course, not suitable if it be surrounded by others, as with the first Vulture's nest we visited. To get a rope over such a tree my own panacea would be to employ one of the late Captain D'Arcy Irvine's line-throwing guns. Were I at the beginning, instead of nearing the end, of my tree-climbing career I should certainly look upon one of these ingenious weapons as an essential article among my birdsnesting equipment. With the aid of one, lent me by the inventor in 1895, I found it quite simple to throw a line with accuracy over a selected bough in a lofty elm tree. Once the line, which is carried by a stick, has been shot over the required spot, it is, of course, a simple matter to haul the necessary ropes over it and to make the ascent.

I left these beautiful wooded mountains of the Guadarrama with genuine regret. Brief as was our stay among them, they daily gave us new experiences, and we saw much of absorbing interest.

Very fresh in my memory are the rides in the great pine forest through apparently never-ending vistas of huge and serried tree-stems, as now we threaded our way noiselessly over the deep

soft carpeting of sweet-smelling fir-needles, or another time urged our horses with noisy clatter across the face of some steep, rocky slide of débris from the crags far above. From time to time our advance would be barred by some natural obstacle which obliged us to make a wide detour. Thus the hillsides at places became

ONE OF THE SIETE PICOS.
A Summit of the Sierra de Guadarrama.

so steep as to be unrideable and compelled us to seek a less slippery track. At others, fallen pines lay about in wild confusion, some prone on the ground, over which our horses could step, others supported at various angles by trees still standing, and under which we passed. Or, again, we would come to a combination of the two obstacles, where an avalanche of loosened rock from

the steep crags high above had swept a path through the pines, tearing many of them from the ground and creating an impassable barrier.

Sometimes our path would follow the course of some noisy torrent, forcing its way down amid great masses of grey boulders, and at places forming quiet pools in which were small trout. We learnt that these streams had repeatedly been stocked with fish, but that before they could attain any size, some predaceous native, armed with the inevitable dynamite, came on the scene and destroyed them.

Through the dark masses of foliage the snow-clad hillsides above us could from time to time be seen, whilst over our heads was always the intensely blue cloudless sky of Spanish spring-time.

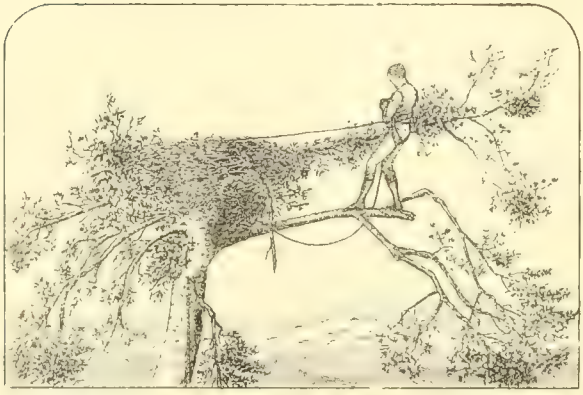
The scenery is magnificent. From one of the summits of the Siete Picos, a mass of black granite rocks, rounded and weathered to the smoothest surface, and built up in horizontal masses, around which the snow still lay deep, we could survey the plains of Castile, seemingly at our feet.

One day, with the aid of a field-glass, we saw the dim outlines of some of the larger buildings of the capital, distant from us some thirty miles, whilst the famous Escurial, its massive walls and vast rambling construction giving it the appearance of a town of itself, lay glittering in the sunlight on the southern slopes of the Sierra below us.

Nor were historic associations wanting, for close at hand lay the famous pass, the Puerto de Guadarrama, through which the tide of French invasion rolled in 1808, as well as those other mountain roads which had witnessed the passage of the hosts which Napoleon, in his wrath, had dispatched to annihilate the audacious Moore, and which same roads, four years later, saw the triumphant advance of Wellington's army on Vitoria and France.

Whilst we were enjoying our marvellous bird's eye view from

this lofty post, some 8,000 ft. above the sea, and 5,000 ft. above the plains below, a Golden Eagle came sailing past us and perched on an adjacent pinnacle rock. Later on, a splendid Bearded Vulture appeared, hunting steadily along the snow-line and paying no attention to our presence, on the look-out, most probably, for any carcass or remains which might come to light as the snows melted under the warm rays of the April sun.

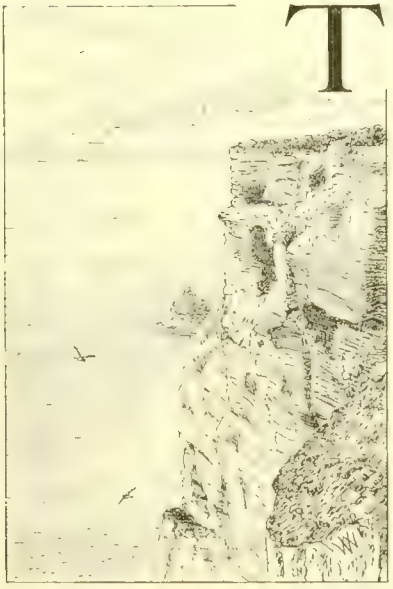


V.—*ALONG THE SEA-CLIFFS.*

CHAPTER I.

A RIDE TO TRAFALGAR.

A by-gone race—Remains of ancient cities—In quest of Sea Eagles—An interesting ride—The cliffs of Trafalgar—Ravens, sea-birds and Ospreys—An ideal spring day—Arrival of migrants, Hoopoe and Great Spotted Cuckoo—Flamingoes—Some cliff-dwellers—A marvellous panorama—Scene of the greatest of sea fights.



THOSE who have passed through the Straits of Gibraltar by daylight will recall the yellow sandhills along the coast of Spain and their background of jagged sierra between Cape Trafalgar and Tarifa. Few however realize that at one time these now desolate wastes were inhabited by a great race and that more than one populous city existed between Gades, the ancient Cadiz, and Carteia, the Phœnician city at the head of Gibraltar Bay.

In my wanderings among these hills skirting the Atlantic, especially near the foreshore, I have come across remains of great antiquity, fragments of walls, aqueducts and temples. There are also the ruins of a great amphitheatre which according to the Jesuit Father Julius Furgus, who visited them recently, could accommodate 50,000 persons. When this great city was destroyed and

who were the human destroyers is unknown. At present the sea has encroached on one side and the great wreaths of wind-borne drifting yellow sand have overwhelmed it from the other and little is left visible to the casual visitor.

I rode along this coast on a brilliant day early in March 1908 in order to visit the cliffs near Cape Trafalgar where it was reported

A SUMMIT IN THE SIERRA ABOVE TRAFALGAR BAY.

that a pair of Sea Eagles nested. The story, an old one, dating back for thirty years and more, was ever disbelieved by both Colonel Irby and myself, still it was worth investigating more especially as it made a very interesting expedition.

Starting at 6 o'clock, I reached the shores of Trafalgar Bay two hours later near the ancient Moorish walled town of Zara or Zahara. At a mountain *cortijo* near here I picked up some Spanish friends, a farmer and his henchman, and we rode along the strand to the river Barbate. After fording a deep tidal branch of the river, a ferry-boat took us across the main stream to the small town of Barbate, famous for its tunny fishery. Leaving Barbate we followed the strand again for some distance until it narrowed and we reached the point where the cliffs commenced, with the waves lapping at their foot. It now became necessary to strike upwards so as to gain a track along the summit. The low cliffs here are of yellow and red sandstone strata surmounting beds of blue slider clay which had been exposed by sea action and is in a constant state of disintegration. Northward of this the cliffs become perfectly vertical and are of an older and harder formation, but rotten and crumbling and very dangerous to climb. The country immediately bordering on the sea-cliffs is overgrown with cistus, lentiscus and cypress, wind-swept and stunted. The ground is very rough and uneven, forming innumerable sheltered dells in which there was, at the time of our visit, a great wealth of colour, masses of pale purple and white rosemary, crimson snapdragon and large red thistles growing in the grassy glades amid arbutus and butcher's broom. Further inland are many square miles of sandhills covered in places with a dense growth of stone pines, many of the trees being of considerable size. Upon gaining the top of the cliffs, about 400 ft. above the sea, we dismounted and giving our horses to our attendant to lead along a track at a safe distance from their edge, proceeded to examine the cliffs. It was a matter of no small difficulty and some risk to approach near enough to the edge to look over but by taking advantage of sundry re-entrants and headlands formed by big slips at various times and of smaller slips among the upper

strata, we succeeded in thoroughly examining the place and a very interesting task it was. Soon the croak of a Raven told us that these wily birds had an establishment in the vicinity and before long we saw their nesting-place in a small sandstone cavern weathered out in the face of the cliff above an horizontal slab. Ravens are particularly addicted to sea-cliffs and like our Hooded Crow of northern latitudes seem to find much to interest and occupy them among the detritus cast up along the foreshore. On the African coast I know of several nests thus situated in the same range of cliffs. It may be a mere accident, but in southern Spain of the many Ravens' nests I have seen and visited the greater majority are within a few miles of the shore. Possibly owing to the numerous convenient nesting situations to be met with amid the cliffs, only a comparatively small number nest in trees.

A few pair of Lesser Black-backed Gulls were nesting upon the detached rocks along the foot of the cliffs and other common sea-birds, such as Green Cormorants were also to be seen. Presently the well-known cry of the Osprey was heard and we saw one of these birds flying along some distance below. From our successive points of vantage we had literally a bird's-eye view of all below us and during the morning saw five Ospreys' nests, of which only two were occupied. Doubtless the others were alternative sites used in other seasons since there were only two pairs of Ospreys in possession of the locality. But no Sea Eagles did I see, nor did I find any site which would have suited that species nor could I find any report of any larger "Eagle" than the Osprey having ever been seen in the vicinity. A pair of Peregrines were nesting on a ledge not far from us and were exceedingly wroth at our presence; there were also many Kestrels and Blue-rock Pigeons, as is ever the case in these parts.

It was an ideal Spanish spring day and circumstances all agreed to make one take it in an ideal Spanish manner, in other

words, to find a comfortable spot amid the sweet-smelling cistus and enjoy life whilst one could. It was now one o'clock and after lunching I lit a cigar and waited and watched and very pleasant it was. In the scrub around us the cheery little Dartford Warblers were ever on the move, and now and again a brilliant Hoopoe, just arrived from its winter sojourn in Africa, would flit past us with its curious undulatory flight, showing the conspicuous black and white barred wings; and, once, a beautiful Great Spotted Cuckoo (*Coccystes glandarius*) also only just come ashore, alighted on a pine tree close to us. Almost vertically below us the white surf of the Atlantic swell was breaking against the masses of loose sandstone fallen from the cliffs above, the water was intensely blue and clear, with here and there pale shades of green and dark purple showing the presence of strips of sand and rock far below the surface. Presently we espied a great crowd of big birds somewhat resembling Wild Geese, flying close to the surface of the sea from the far distant African shore. As they neared us the sun struck on their backs and they became a mass of rose colour and we realized that they were Flamingoes, no doubt some of the pioneers of the spring migration, wending their way to the marismas of the Guadalquivir. As they passed below us, flying close together, so close indeed that at places their black-tipped wings seemed almost to touch and overlap, they presented an extraordinary spectacle—surely one rarely seen by the wandering naturalist—of a moving mass, crimson and rose and white, streaming over the dancing blue wavelets below, which changed its shape and size from one moment to another as the birds in their flight closed into a dense body or opened out again into sinuous lines. Their course took them inside the low sandy spit jutting out towards the lighthouse of Trafalgar and, apparently unwilling to trust themselves over the land, they altered their course and in long undulating lines flew boldly seaward. It was indeed an unusual spectacle seen from such a point of vantage so far above them.

Now and again huge portions of the cliff had become detached and had fallen in disordered masses below. On these were grassy

THE STRAND OF TRAFALGAR.
View from Vulture's Cavern in Sierra above.

terraces, some of them densely overgrown with brambles and lentiscus scrub. Whilst peering over the edge at such a spot, we saw several rabbits scrambling about the face of the cliff. These

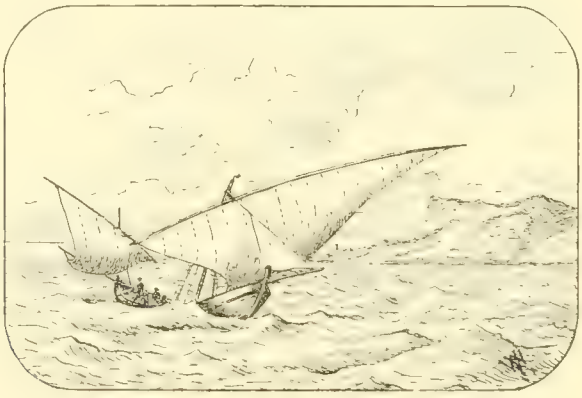
little animals must surely spend their whole lives there, for with the steep overhanging cliff above them and the sea washing below, there would seem to be no means of escape. It was whilst watching them that we suddenly spied a big Wild Cat (*Felis catus*) sidling along a narrow shelf of sandstone until it disappeared into the tangled mass of scrub. It was quite unconscious of our presence and was evidently intent on a rabbit for dinner.

The view from the summit of the cliffs of Trafalgar is one of vast extent and surpassing grandeur. We were fortunate in having a very clear day. The whole of the African side of the Straits from Apes' Hill, opposite Gibraltar, past Tangier to the blue headland of Cape Spartel far out in the Atlantic lay before us. Beyond Spartel, the Atlantic coast down to Arzila, Larache and southward stretched away into space. Tarifa itself was hidden by the spur of yellow sandhills which engulf the old Phœnician city of Belon. Northward the whole strand past the white town of Conil and onward to the Isla and Cadiz was visible, whilst eastward, the rugged outlines of the Serrania of Ronda, over 70 miles distant, were clearly silhouetted, as were the nearer Hacho of Gaucin, the Sierra Bermeja near Estepona and beyond these the Sierra Blanca and far distant Malaga Mountains. Truly a marvellous panorama. From the spot I occupied I could see the ground beyond Conil where Graham, afterwards Lord Lynedoch, marched to fight and defeat the French at Barrosa in 1811.

But the chief historical interest naturally centred in the sheet of glittering water immediately below us, for we were exactly opposite the spot, "Cape Trafalgar bearing 10 miles east," where the greatest of naval battles was fought. What a view the inhabitants of these wild hills must have had from the point we now occupied, over 500 ft. above the sea, on that 21 October as Nelson's twenty-seven ships bore down on the straggling line of French and Spaniards heading for Cadiz. With the wind W.N.W.,

as it was on that day, the smoke of over 4,000 guns must have drifted right over the cliffs where I stood. I remember now many years ago an old Spaniard describing to me how as a small lad tending goats on the sierra he had heard the roar of the guns and seen the great column of smoke rising above the contending fleets, and as I surveyed the actual scene of that mighty conflict stretched out below me, I saw it in my imagination crowded with white-sailed line-of-battleships enveloped in drifting smoke and locked together in that death struggle which for over a century has secured for us the command of the sea.

Nor did I fail to conjure up to myself the scene all along the coast below, strewn with wreckage and dead bodies, for many a crippled ship was driven ashore and totally lost in the gale which followed the battle. My companions, simple country folk, were sorely puzzled at my remaining so long in meditation and gently reminded me that they must leave me as they were bound to re-cross the Barbate before the tide rose. So I bade them farewell and, mounting my horse, rode homewards alone through the big stone pines, many of which must surely have been silent witnesses of the day of Trafalgar.



$\frac{1}{6}$

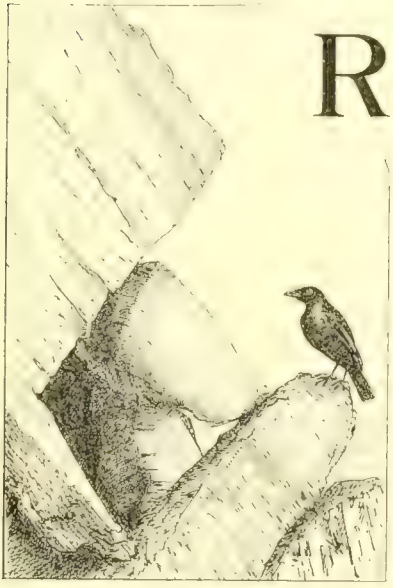
RAVEN.

Corvus corax (Linn.).

CHAPTER II.

THE COMMON RAVEN (*Corvus corax*).

Late nesters in Spain—Curious habit of congregating—The Tangier or Brown-necked Raven—A nest in a pine tree—Raven trapping—Artful choice of nesting quarters—A two-fronted residence—Nest in a deep fissure—Awkward photography—Arrangement of eggs in nest.



RAVENS are extremely abundant in southern Spain and are even more so in Morocco. Despite their well-known appearance, flight and call, which render them unmistakable at almost any distance, few birds have caused me greater perplexity in my attempts to understand their ways or the reasons which regulate their movements. To begin with, in southern Spain, where, according to our British standard of climate, an almost perpetual summer reigns, the Ravens nest, not, as might reasonably be assumed some weeks earlier than in our Islands, but on the contrary, at least a month and frequently, more than two months later. Curiously enough I found much the same condition of

things in the Island of Crete, where, out of many nests visited, only one contained eggs during the last week of March 1886, the rest being still in course of construction. Why it is that in the exposed and almost arctic climate of northern Scotland as well as in the wet and storm-swept shores of Ireland and the west of England these birds should elect to lay in February and why in sunny Andalucia they should defer doing so till the middle of April is, to me, an insoluble problem. Yet again, as to the number of eggs laid, whereas in our Islands, three or four would seem to be the usual complement, in Spain, six is the number commonly found and next to that five.

Another puzzling habit of Ravens in Andalucia is the manner in which they, from time to time, collect in considerable numbers for a brief period and then as suddenly disperse. On such occasions they are invariably in pairs and their movements are obviously made in accordance with some well-defined ulterior object. What this can be, I am unable to say, for in all my wanderings in wild Spain I have never met with a large party of Ravens collected around the carcass of an animal, nor have I ever heard of such a gathering. I mention this, because, when Vultures are seen to be moving towards any defined point, it is invariably to foregather at one of their banquets.

To give an example of these assemblages of the Common Raven. On 18 April, 1906, I was riding along an open river valley and noticed a pair of Ravens, coming from the north, settle on a pine tree to my front. Soon a second pair arrived from the same direction followed by another and yet another. Meanwhile the first arrivals had moved on and disappeared through a pine-wood out of sight and were in turn followed by their friends. Before I had passed this line of flight, no less than seventeen pairs of Ravens had proceeded along it. Now what could these birds have had in view? Although Ravens are numerous in these

parts, they never nest in colonies as do the Choughs. Rather do they keenly resent the intrusion of any of their species and each pair of Ravens establishes itself on some cliff or tree at some distance from others. From my own particular knowledge of the district where I saw these birds, I can vouch that there are certainly not more than six pairs nesting within a radius of five miles of the spot where these birds congregated. In view of what I am about to say about the Tangier Raven, I may add that I am positive that all these birds I saw were Common Ravens and further I draw a distinction between a processional movement of pairs of Ravens of the type I describe and a general assemblage of birds, such as one sees at times among the Ravens in Morocco, or Rooks in our own Islands.

Over thirty-five years ago, the existence of a small species of Raven in Morocco was noticed by Colonel Irby and was first described by him in the *Ibis* of 1874 as *Corvus tingitanus*.

According to Irby, this species is decidedly smaller than the Common Raven and its note is different, whilst so gregarious is it in its habits that it is no uncommon sight to see flocks of these birds feeding on the refuse along the sea-shore near Tangier. During my travels in Morocco I have seen such assemblages of Ravens myself but I have never shot any birds with a view to establishing their identity. The Tangier Raven has also been described as the Brown-necked Raven and Irby notes that many specimens are marked, more or less, with rusty brown on their wings and tail, although this colouring is of no importance in determining the species. In the task of identifying birds on the wing, especially when at a distance, size is one of the most difficult factors. Everybody who has attempted to pick out any particular species of Gull will know well what I mean. In such a case the appearance of some well-known species, such as an adult Lesser Black-backed Gull, at once gives a "scale"

whereby to judge the size and species of others. Hence although in the case of a Common Raven 24 in. in length seen in company with a Tangier Raven only about 18½ in. long, it is easy enough to tell the larger from the smaller species, when several of the same species only are seen together at a distance it requires more skill than I can pretend to, to know which they are. It is owing to this difficulty that I have to confess that I have failed to establish the fact of the nesting of the Tangier Raven in Spain. As regards the ordinary methods of identification, shooting or trapping, such is the perversity and cunning of all Ravens that it is no easy matter to shoot them, even from the nest, and as far as my experience goes they consistently decline to be trapped, preferring even to abandon their eggs to walking into a trap concealed in the nest. In the words of an old Spaniard who witnessed my discomfiture by a Raven which obviously detected my evil intentions: *Sabe el cuervo mas que el hombre*—"The Raven knows more than the man." Hence such evidence as I have to produce is of the negative type, or, in other words, where I have clearly verified the species nesting, it has *not* been the Tangier Raven. The one exception to this occurred in 1879, when on 24 April, chancing to be riding past within view of the pine tree where I had trapped a Red Kite three weeks previously (as described in the chapter on Kites), I saw a Raven fly out of it. On climbing up, I found the Kite's nest had been completely remodelled by the Ravens, the sides had been raised by a well-knit parapet of sticks and enclosed a deep cup, thickly lined with goats' hair, in which were five light green eggs, closely marked with brown and to my eyes decidedly smaller than any Ravens' I had then seen. Whilst I was in the nest the old birds flew around and seemed to be not nearly so big as the ordinary Raven. All attempts to trap the old bird failed. Three days later I returned to the nest and found a sixth egg had been laid. On this

occasion the old bird slipped off the nest when I was far distant from the tree and such is their usual way.

Since then, I have visited very many Ravens' nests and have seen eggs innumerable, but I have never come across any which exactly resembled this set of six, which are much nearer in shape and size to some of the eggs of the Carrion Crow I possess than to any Common Raven's.

On various occasions I have seen considerable assemblages of Ravens, which, so far as I could judge, seemed to be of the small species. The curious part of it is that these gatherings were generally at the height of the nesting season. Thus in April 1878 I saw over forty small Ravens in the plain north of Tarifa, on 29 April, 1879, about fifty near the River Guaddarranque, and again over forty near the Palmones River.

Irby expressed his belief that the Tangier Raven nested somewhat later than the Common Raven on the Spanish side, naming 20 April as their usual date. From the following data taken from my notes, it would seem as if this was also the average date of laying of the Common Raven. Of eight nests visited in recent years, the earliest date for the laying of the first egg was 13 April and the latest 26 April. Two of these nests contained four eggs, one five, and five six. The average date of laying would appear to be about 20 April.

As regards the date of hatching out I have found nestlings only a day or so old on 21, 24 and 26 May and this would appear to be the average date of their appearance in southern Spain.

I know of no large and conspicuous bird, such as the Raven, which, when circumstances demand it, is more adroit at concealing its nesting-place. Of course, when it nests in trees, this hardly applies. All the same I know of several nests which have eluded detection year after year owing to their similarity to one of the chance collections of fir spines which are so common in some of the pine trees in

Spain Some nests rely solely on their inacessibility combined with the remoteness of their situation, and are placed without the slightest attempt at concealment.

The Raven excels most in the art of deception when it nests in some of the smaller crags which it frequently resorts to because they are inconspicuous and provide caverns or fissures in which it can conceal its nest. As a rule nests built in such situations are constructed so that no portion of them is visible from below.

Quite the most artistically concealed and cunningly placed of the many Ravens' nests I have visited was one placed in a small domed cavern near the summit of a crag not 50 ft. high, vertical on one side but sloping so gently on the other that anybody can scramble up to it. In this the Ravens nested for over thirty years. In 1877 I shot one of the old birds within 20 yards of this spot, thinking it was a Tangier Raven, but no nest did I see. Year after year I passed close under this crag but there were no signs of a nest, although the constant presence of the Ravens told me they must be nesting hard by in one of the many rocky ravines. At last in 1903 I chanced to be passing the crags with several friends and sent two of them along the ravine below the cliff whilst I proceeded along the shelving side. Presently I heard a shout and was told that a Raven had just flown out of the cliff close to me. Looking over the edge I could see nothing, but upon rounding an angle of rock hard by I spied a hole on my side of the crag which led to a cavern in which was a Raven's nest with four eggs. The secret was out. The wily bird had so arranged its establishment that no matter which side the enemy, man, appeared, it could always slip out on the other side unseen. Small wonder then that upon the innumerable occasions when I had passed along the goat-track below the nest since 1877, when I first saw a Raven there, it had quietly departed by the back door as I approached

the main entrance and *vice versa*. It was a pure chance that upon this occasion, as Admiral Farquhar and I neared the back

A RAVEN'S NEST AT BOTTOM OF A DEEP FISSURE IN A CLIFF.

door, the rest of our party were in the ravine the other side commanding a view of the front door. But never again. She and her

mate still nest in these rocky ravines but not in the old double fronted situation, a sketch of which appears at the beginning of this chapter.

It was not until I obtained conclusive proof on this cunning habit of the Raven that I paid any attention to the matter. Since then I have revisited several nests known to me for many years past ; and in two instances have I found a precisely similar arrangement whereby the old bird can slip off her nest unobserved, by means of a back-door. One of these is in a crag known as *La Cueva del Cuervo*, which has been occupied recently by a pair of Egyptian Vultures. A picture of this nesting-place will be found in the chapter on Egyptian Vultures. I now know why it was that I never saw a Raven leave this crag when they nested there.

Owing to this habit of resorting to recesses amid the rocks it follows that most Ravens' nests are somewhat awkward to photograph. The picture given on the preceding page is of a nest most artistically placed in the depths of a fissure on the face of a small cliff about 100 ft. high and not 10 ft. from the summit. Entrance to the nest is gained through a narrow fissure immediately in front of it, through which the light is seen to be shining in this picture. To get at this nest I had to descend from the top of the cliff through a narrow chimney which widened out at the bottom and this photograph was taken standing with my stockinged feet and knees pressed, chimney-sweep fashion, on either side of the gully and with the camera jammed against the rocks at a point $4\frac{1}{2}$ ft. above the nest, where some slight protuberances made it possible to hold it perfectly steady for thirty-five seconds. Having taken this general view of the nest as seen from above, I went down lower and holding the camera firmly against the rocky wall shown near the left hand top corner of the first picture, only 18 in. above the eggs, took the second one with an exposure of forty seconds, I may mention that the first picture was taken with a Goerz lens

and the second with my ordinary Kodak with magnifier attachment. It was a troublesome business and took over an hour to arrange

RAVEN'S EGGS. (Size 2·0 in. 1·3 in.)

and it was not accomplished without some failures. In one of these I failed to hold the camera steady owing to my constrained

position and in another my foot slipped and I narrowly avoided tumbling down into the nest.

I would call particular attention to the arrangement of the eggs in these pictures, which is characteristic of the Ravens' method when she has six eggs to incubate and is probably the only one which enables her to cover them in a satisfactory way when sitting. I have seen similar arrangements in other nests.

16

OSPREY.

Pandion haliaëtus (Linn.).

CHAPTER III.

THE OSPREY (*Pandion haliaëtus*).

Common about Straits of Gibraltar—Nests on the Rock—Mentioned by White of Selborne in 1776—Same site occupied in 1876—And now—The Osprey's foot—Methods of fishing—Transparency of water seen from above—An Osprey's breeding-station—A flower-strewn islet—A difficult situation — Use of a fugleman — A difference of opinion — The "Senior Service"—A terraced cliff—Prickly pears—Repeated failures—And final success—A big nest—Unpleasant results of climb.

THIS is yet another of the larger birds which were at one time fairly abundant throughout the northern portions of our Island. Owing to their world-wide geographical distribution, they are to be met with in all suitable localities, and it is very certain that if only people could be induced to refrain from shooting them in the United Kingdom they would soon re-establish themselves in many of their old haunts. It is gratifying to know that, thanks to the greater interest taken in wild birds of late years, several large landowners in the north now jealously guard the

Ospreys which come to nest on the islands of the big fresh-water lochs.

These beautiful birds are still fairly common in the Straits of Gibraltar. A pair have nested at the back of the Rock from time immemorial and were duly noted by the Rev. John White in a letter to his famous brother of Selborne in 1776. I first saw their nest there in 1874, and have since then watched the old birds on innumerable occasions. In some years two pairs nest there and in one year very recently I watched three pairs on the wing together, but do not think more than two nested.

Of the three sites I know one is not 40 ft. above the sea, on a ledge which is overhung by a big cliff some 300 ft. above it, and may be reckoned as inaccessible. A second site is in the same cliff and about 250 ft. above the sea. The third is in the roof of and near the entrance of one of the huge sea-caverns and is overhung.

An excellent standing Garrison Order of the old Rock forbids the wild birds being molested, but the surest protection for the Ospreys is the difficulty of getting at their nests.

I make no scruple about mentioning these nests since they are known to many. From one of the now disused old batteries near Europa Point the birds can be easily watched with a telescope on the nest, as can the young when they are hatched out. I spent one whole summer at "The Cottage," the summer residence of the Governor of Gibraltar. Watching the Ospreys both at their nests and when fishing in front of my windows formed not the least interesting of my duties as A.D.C.

The sketch at the beginning of this chapter is a copy from one made at this time and the positions of the upper and lower nests on the overhanging cliff are indicated by the birds shown flying opposite to them.

The persistency with which the Ospreys resort to these sites

is the best proof of their general immunity from attack. On the homeward voyage from Egypt in the summer of 1885 consequent on our withdrawal from the Soudan, I chanced to mention the Ospreys, and, as is so frequent when ordinary well-ascertained facts of natural history are told to the uninitiated, was chaffed a good deal when I asserted that without doubt we should see the Ospreys on their nest when we passed the Rock. The affair ended in the captain of our transport good-naturedly altering his course and steaming in close under the point. Every glass was directed on the nest and much was the jubilation at its being apparently empty, until the old bird suddenly rose from off her young and standing up showed her white breast to the Camel Corps of unbelievers!

From time to time some thoughtless gunner has shot one of these beautiful birds. I know of five instances in the last thirty-three years, and of course there may be others, but the bereaved bird soon finds another mate and all goes on as before. No doubt there is an inexhaustible supply of eligible young Ospreys, male and female, to be obtained from the opposite coast of Africa. On that side there is usually an Osprey's nest wherever there are any bold headlands or sea-cliffs. I have seen three nests on one headland within a few hundred yards of one another. Here they are reasonably safe, for, owing to the heavy swell which sets in, landing is often impossible, and in addition Ospreys, unlike so many Eagles, seem to appreciate the advantages of selecting awkward cliffs as nesting stations. Also, entirely apart from the present disturbed condition of Morocco, some of these nests are on parts of the coast where Europeans have never been welcomed and in consequence have very rarely been visited.

Many writers have described the structure of the Osprey's foot; how the better to secure its fishy prey the outer toe is reversible so that the foot can be either used, when perching, with three toes

in front and one behind (in the normal fashion), or, when a fish has to be held, with two in front and two behind. Professor Newton gave an excellent figure of the structure of the foot in his Dictionary. Yarrell points out how the wide lateral movement of the outer toe enables the foot to hold an object on all four sides, and describes how an Osprey in confinement was seen to seize its food thus. I confess I have never examined the marks made by the talons of an Osprey on a captured fish, but after watching Ospreys seize their prey it seems as if it was always carried "fore and aft," or parallel to the body of the bird and not "athwart." In such a position the claws would probably hold a slippery fish most securely if they entered it from two points in its back and were "clamped" by the two other claws, one on either side of the body. No doubt this matter has been observed by other field-naturalists, but I can find no reference to it. With a fish thus held longitudinally, the marks of the claws of each foot would indicate either the four points of a St. George's or of a St. Andrew's Cross on the fish's back, according as whether they were distributed as I suggest, or "two in front and two behind."

The cry of the Osprey is of the well-known falcon or hawk type, such as Kestrels and Sparrowhawks use when scolding, only of course a good deal more powerful. When one approaches a cliff where they are nesting they will, from time to time, sail close past crying out in this manner, and very fascinating it is to watch them.

I have also often heard the cry at night, but seemingly from birds sitting in or near their nests. Ospreys habitually use the unoccupied alternative nesting sites as places to perch and feed in, and hence the cries may come from roosting birds. They remain out fishing till long after sundown, and on one occasion, when rowing homeward in the month of November from some sea-cliffs, a friend with me shot at and killed an Osprey when it was too dark to see what he was firing at. The unfortunate bird at the time was flying into a cavern to roost.

When an Osprey leaves its nest or perch among the cliffs, it usually flies seaward in a straight line for some distance, and then commences a series of wide sweeps and curves until it is out of sight. When fishing, it flies in circles with motionless wings about 200 ft. above the sea until it detects a fish below, when it momentarily checks its pace and flaps its wings and, if satisfied with what it sees, drops like a stone into the waters, generally disappearing altogether and throwing up a small column of foam. Next instant it emerges, rarely without something in its talons, and wings its way by a steady flapping flight to the rock or point of vantage where it can make its meal in peace. Sometimes, just before it touches the water, it suddenly checks its fall by a few vigorous flaps and then soars upward to recommence the chase. In such cases, in all probability the fish the bird had selected when circling high above the water had either dived away or was found to be at too great a depth for a successful pounce.

Most people have heard of the remarkable transparency of smooth water when seen from a height above, which at times presents to the balloonist the optical illusion of there being no water at all in a pond. I first saw this when crossing the Frensham ponds in a War balloon. As is usual, the approach of the balloon caused great alarm to the fowls and ducks in the immediate neighbourhood, the hens clucking violently and running off to take cover from view, whilst the ducks scattered about the surface of the water and dived vigorously. From the height we were, the diving ducks, when once they ceased to disturb the surface, had the appearance of ducks flapping about on dry ground, for the weeds at the bottom of the shallow pond seemed to our eyes to be exposed to the air. No doubt the eye of the Osprey is trained to gauge correctly the depth below the surface of the fish it contemplates making a meal off, but it must be a very delicate adjustment that permits of the necessary degree of accuracy.

Wherever Ospreys are to be found, there is no bird which lends itself better to watching when engaged in search of its food, since unlike other raptorial birds in pursuit of their quarry amid hills and woodland, it ever hunts in the open where there is nothing to obstruct a view of its actions.

I have met with it up tidal estuaries, where it pursues the same tactics as when at sea, but with the difference that in place of dropping like a stone on to its prey it sweeps down and, after the manner of a Gull fishing, lightly dips into the water and as quickly mounts again. Of course, in such places many of the small fish are in extremely shallow waters over the mud-beds and sand-banks, where a vigorous dive might mean annihilation.

The Osprey is usually credited with selecting as a nesting-place some situation dangerous of access, and I must admit that the statement, from my own experience, is correct, and that as a rule where the nest is not in a dangerous position it is only accessible by climbing, with or without the aid of ropes. Of course this does not apply to some of the nests on ruined buildings in the Scottish lochs, but to most of those one sees in sea-cliffs.

The simplest nest to reach I ever saw was one placed on a small projecting rock only 12 ft. or 15 ft. below the crest of a limestone cliff. The nest was visible from above, but below it the cliff receded, with the result that there was a clear drop between it and the sea some 230 ft. below. However unreasonable it may seem, a nest in such a place as this is ever more alarming to look at than is one placed in some really dangerous place, since nothing is here required to reach it beyond good nerves and good ropes. This nest contained three magnificently marked fresh eggs on 31 March, which is about the normal time for Ospreys to lay.

This expedition was one of the many red-letter days of my ornithological life. The Ospreys' stronghold was on a big detached rock some hundreds of yards from the mainland. All around it

and between us and the shore the water was many fathoms deep and of the most intense blue, with deep purple shadows below the great cliffs opposite.

AN OSPREY'S STRONGHOLD.

To reach the summit we had to effect a landing from a dinghy on some slippery rocks in a deep cavern into which the swell was gently surging. This cavern was full of nests of the Green Cormorant, mostly at the time of our visit containing hard-set eggs or black sprawling naked chicks. It is needless to insist on the aroma of the place. A scramble round some rocks and up a steep gully

brought us to the brilliant sunlight on the top of the crag. Although the serrated ridges of limestone scarcely permitted of our seeing the ground between them, through the interstices of the rock grew an amazing wealth of flowers. Masses of wild parsley, red and white fumitory, marigold, catchfly, squill and fennel were to be seen on every side, whilst tall sprays of asphodel and big acanthus reared their heads above all. It was difficult to keep one's footing in places owing to the densely growing lentiscus bushes, shorn by the wind and fitting closely into the cavities of the rocks, concealing deep gullies and fissures.

I will now describe a more difficult situation, that of a nest placed on a projection about 100 ft. down a cliff 350 ft. high. Here again from the nest to the sea below was a clear drop. But the difficulty was that the cliff had no really defined edge, its top being a steeply sloping terrace of loose stones amid which happily there were a few palmetto bushes. These afforded secure foothold to the lowering party (in this case three good men). Owing to the rounding-off of the edge of the cliff some 30 ft. below the point where the lowering party were ensconced, it was impossible to see how to proceed until one was over the edge. In consequence, as a reasonable measure of security I was let down in a bowline to the very brink, whence I could act as fugleman and receive the signals of my friend when he was lowered down the cliff and pass my orders to the party above.

At the last moment one of those absurd incidents occurred which impress themselves for ever on one's memory. For many years previously, although I had constantly obtained the assistance of both naval and military officers, it had always and legitimately fallen to me to make the actual descent. This time I was debarred from descending myself, since, being the originator of the whole conspiracy against the luckless Ospreys and many years older than any of my party, I felt that the responsibility of the whole affair

lay with me. Hence my assumption of the most unpleasant, and to me painful, duties of fugleman, for in cliff-work it is always far worse to watch another man climb than to do it oneself. On this

DESCENT TO AN OSPREY'S NEST.

occasion three of my party were naval men, two of them regular athletes, absolutely callous to any sentimental notions about heights and the so-called dangers of cliffs.

Having visited the same nest ten days earlier, when we found it empty, I had reckoned upon the same man who then descended, and who knew the difficulties of the job, repeating the operation. But I was mistaken. Noticing that there was a hitch in the proceedings, I called out. The reply was that there was a difference of opinion as to who should go over, each of my athletes insisting on his right to do so, the one because he had been before, the second because he had not been! It was no time to palter, and so, with the decision begot of military training, I ordered the senior officer to proceed, which he promptly did.

Those only who have been in really dangerous situations in big cliffs can appreciate the difference between having men as assistants who endeavour to dissuade one from an adventurous descent, as has frequently been my experience, or, as in this case, having men who actually quarrel as to which is to be the privileged individual to go over! With such assistants as I had on this glorious day I would long since have had no more worlds to conquer, in a birdsnesting sense. This nest contained two fresh eggs on 10 May, and these in my opinion were a second laying, due to the first having been molested or destroyed in some way.

Another's Osprey's nest, of which I was fortunately able to get some photographs, was also on a sea-cliff, but in an altogether different position. In this case the Ospreys had as their defence not only a formidable cliff consisting of several terraces (always the most perplexing to tackle), but the summit of the cliff as well as the terraces was densely overgrown with prickly pear, making access most difficult. Added to this, below lay a steeply sloping talus of fine débris, fallen from the cliff above, which it was necessary for us to traverse from the point where we landed, before escalading the cliff at a weak spot. How dangerous was this talus in places was proved by Admiral Farquhar on another occasion; for one of his party, attempting to cross it gun in hand, found it impossible

to proceed without the aid of both hands and after consultation with the others had to abandon his gun, which was dashed to pieces on the rocks far below. This talus in our instance proved too much

THE OSPREY'S CLIFF.

for some of my party and unluckily amongst them was the man whom I had relied upon to signal to me the precise position of the nest when we had gained the summit.

In this picture of the profile of the Osprey's cliff, taken from a point on the talus about 150 ft. above the sea, the Osprey is seen leaving her nest which is the dark mass on the summit of the prickly pears on the same level as the bird.

A careful reconnaissance with a telescope from the deck of our vessel had made it clear to me that my difficulties would only begin with our arrival above the nest. Once clear of the dangerous talus we got amongst dense lentiscus and brambles, also prickly pear, aloes and all the usual obstacles presented by a semi-tropical jungle. Finally we emerged, blown and exhausted, on the grassy summit, and lay down to get our wind. Next, we had to fight our way through the dense scrub to the point which we imagined to be above the nest and then work our way down the steeply sloping cliff until brought up short by a sheer drop of some feet.

Now commenced my work and I descended on my rope to terrace after terrace, forcing my way through thick rows of prickly pear—a most painful operation. And now we found that there was nobody below to signal to us where the nest lay. The inevitable result was that after descending over 100 ft. I had to signal to be hauled up again, always through the prickly pear. Again did I descend and again did I fail to find the nest. On the third occasion I reached a recess in the great cliff whence, after unbending my rope (and securing it to a bush for obvious reasons) I made a cast along a ledge to the south and reached a point which I identified as being not far from the nest as seen from below. So I retraced my steps, and regaining my rope was hauled up for a third time. During this operation I passed a ledge where a Peregrine Falcon was nesting. The old female swept close around with shrill cries and eventually alighted on the sandy shelf of rock within a few feet of me and with outspread wings and every feather standing on end, lowered her head and screamed

furiously. I have no doubt that I was close to her young, but I had more serious work in hand and so I left her alone.

I now made my fourth and last descent and found myself immediately over the nest, but before I could go down to it the party handling the rope had to work their way down towards

AN OSPREY'S NEST.

me since the rope was too short. Finally I reached the nest, an enormous mass of big sticks measuring over 5 ft. across, and doubtless the result of many years' work. In it were two eggs much incubated. By standing on a ledge close to the nest and pressing the camera between my body and the face of the cliff I

was able to take some long time-exposures with fairly good results. It was near sunset and the cliff was in deep shadow, which did not facilitate my task. Between the shaly nature of the cliff, the slippery terraces covered with loose soil and stones and the detestable prickly pears, I never had a more unpleasant or arduous task on a cliff before. But I have lived to endure worse experiences, although not so painfully protracted as were these.

My very curt entry in my diary summarizes the whole job thus: "Bad shale cliffs, vertical and dangerous, height of nest above sea 160 ft. Top of cliff 310 ft., the worst managed bit of rope-work I ever did."

With regard to the prickly pears, it was many months before the last of the poisonous spines I had collected in various parts of my body consented to come out, and then only after first festering.

Such are my experiences of Osprey photography! Still I am quite prepared to hear some brother worker assert that he usually visits Osprey's nests in places where one can trundle a wheel-barrow!

V.—*AMID THE SIERRAS.*

CHAPTER I.

A DAY IN THE LOWER SIERRA.

A distant view in 1884—A registered vow—Repeated attempts to carry it out—A spring day's ride—Grass lands and cultivation—A watercourse and its occupants—An extensive view—The cistus scrub—Rock sepulchres—Their unknown origin—Reach the cliff—A Vulture's colony—A careful reconnaissance—Formation of cliff—A practical lesson in geology—Explore a cavern—A subterranean route—Among the Vultures' nests—Photographing young birds—Behaviour of their parents—Magnificent scenery—An ideal residence.

ONE autumn day, so far back as the year 1884, whilst crossing the Bay of Trafalgar on my way to Egypt and the Soudan, I was examining the mountainous country north of Tarifa with a telescope. I had already a tolerably good acquaintance with the topography of this district having made various expeditions into it, both for shooting and in quest of birds' nests during the preceding ten years. On this occasion however I detected a cliff of whose existence I had hitherto been ignorant, amid the broken and rocky slopes of

one of the sierras which lie behind the sandy shores of Trafalgar Bay.

Referring to my diary of 26 September, 1884 I find the following entry anent this cliff. "This must be worked up some day." At the moment circumstances did not lend themselves to such a scheme. I was on board of a 10-knot "tramp" steamer chartered to convey some forty of the famous Nile whalers to Alexandria, by the aid of which sanguine spirits still believed it might be possible to lend a helping hand to General Gordon, at the time so sorely beset in Khartoum.

In 1884 the Soudan, with all its difficulties and perils was practically *terra incognita*, not only to us soldiers who were about to be launched into its wastes, but to the vast proportion of the civilized world to whom it was indeed but little more than a name. Nobody at that time had the slightest idea what lay before us, and as usual the only fear on the part of the soldiers was that there might be no fighting, a pious apprehension which subsequent events in the Bayuda Desert proved to have been entirely groundless.

Nearly a year later, when on the homeward voyage after our unsuccessful attempt to reach Khartoum, I once again saw the same cliff shining in the afternoon sun, and once again registered a vow to try to visit it some day, since my fancy peopled it with Vultures, and possibly Eagles whose eggs might help to enrich my collection.

But although frequently in Spain during the next twelve years, fate seemed to be against my ever attaining my object. On several occasions I made efforts to cross the sierra and reach the point, but was from some cause or another as often baffled. At one time, rains made both sierra and the miles of soft clayey foothills below it practically impassable. At another, although successful in reaching the neighbourhood, I found that the hours of daylight

remaining would not permit of my crossing several rugged spurs and deep ravines which lay between me and the point where I reckoned the cliff must be.

It was not until May 1901 that I found myself once again within a day's ride of the part of the sierra wherein lay the cliff I had seen in 1884. April had been a month of extraordinary rains and floods but for the last two weeks we had enjoyed splendid weather and the tracks and mountain passes were in excellent travelling condition.

It was on one of those glorious spring days, which to my prejudiced mind are nowhere so glorious as under an Andalucian sky, that we rode forth on our expedition in quest of the cliff accompanied by a couple of Spaniards, both old friends and companions in many similar undertakings.

In the middle of May, the time of our visit, the whole country was carpeted with flowers, pink mallow and brilliant blue convolvulus predominating. Birds of course abounded, the most conspicuous being Calandra Larks, a fine species, almost double the size of our own Skylark. Its song is more powerful in some parts than that of our bird and it sings, like ours, when on the wing, but not at such heights or with the same persistence. Corn Buntings sat stupidly on thistles or sprays of defunct asphodel giving vent to their tedious call with aggravating monotony and allowing our horses to pass within a yard or two without showing alarm or surprise.

Soon we reached the arable land abutting on the level plain which at this season is covered with crops of barley and bearded wheat now nearly full grown, although still green. Our route usually ran along the edge of some tortuous watercourse, at times striking across the undulating hills along a headland between the crops until it once again joined a watercourse. The numerous tracts of fallow land were covered with mustard, whose golden flowers were in places more than 6 ft. above the ground.

These watercourses in the month of May form a haven of refuge to a multitude of living things. True it is that the streams at their bottoms are usually trivial, but at frequent intervals the winter floods have hollowed out deep pits with precipitous sides which now form a succession of pools and afford an asylum for much animal life. With abundant water below and the sun of southern Spain above it may easily be imagined that along these watercourses Nature simply runs riot. The banks are densely overgrown with rank grasses and herbage rendered gorgeous by the variety of tints of the crimson sanfoin and deep purple-blue cerinthe. Frogs of all sizes both green and brown keep up a noisy chorus which suddenly ceases as they detect the approach of a traveller and successively take headers into the pool below. Along the steep sunny side of the gully water-tortoises are to be seen clustered on the hard baked mud from which they scuttle or simply let go and fall into the water with a series of flops. At places the path is almost blocked by huge umbelliferous plants with white flowers over 9 in. across, and by a profusion of big yellow and purple thistles.

Between the flowers, plants, reptile and last, but not least, teeming insect life, a ride along one of these watercourses is to me ever a source of interest and yet it is merely a passing phase of similar, albeit differing experiences under the ever-varying conditions of travel in Andalucia.

As we gradually left the low country and ascended the rolling green hills which everywhere skirt the *monte* or scrub region, our view of the surrounding country rapidly extended. Behind us, the vast plain of the Laguna de la Janda stretched northward towards the far distant purple hills, amid which the old Moorish towns of Alcala de las Gazules and Medina Sidonia sparkled white in the strong sunlight. Soon the Bay of Trafalgar with its fringe of yellow sandhills and steep sandstone cliffs came in sight. Far away

to the north-west we could dimly see the white houses of the Isla glittering through the haze.

Turning southward we commenced the ascent of the lower spurs of the sierra proper, the track gradually grew more rocky and difficult and eventually it became necessary to dismount and lead our horses. The scrub grew denser and at places it was no easy matter to force our way through it along the narrow track. We were now in the region of the palmetto, lentiscus and cistus; and what cistus! The slopes bordering on the sandhills near Trafalgar Bay are covered with dense cistus scrub often 6 ft. high, bearing magnificent white blossoms, some of which measure fully 4 in. across. This was in full bloom at the time of our visit and hundreds of acres of hillside were covered with its beautiful dark green foliage, dotted everywhere with these glorious white flowers. Higher up the mountains, a peculiarly beautiful dwarf cistus with a rose madder ring encircling its centre was tolerably abundant as also were others with white, yellow and crimson blossoms.

Sixteen years is a considerable time to carry precise topographical details in one's head, and it was therefore no very great surprise to me upon our gaining the crest-line of the ridge we were ascending to find that there was no cliff to be seen of the dimensions I had noted in 1884. Sure enough there was a crag or rather a series of crags to our front, but none of these was the one we were in quest of. To these rocks we however proceeded as it was probable that from thence a good view might be obtained. Leaving our horses and men amid the cistus scrub below we scrambled up the rocks and were rewarded by seeing on the sky line to our left front and about a mile distant several serrated crags, which might possibly belong to the cliff we were in search of; but I began to have uncomfortable doubts of its existence.

It was whilst climbling these rocks that we came across a series

of those mysterious sepulchres which are so often met with in similar situations in Andalucia. These are invariably hewn out of

ROCK SEPULCHRES AND CISTUS.

the flat surface of the rock and measure the traditional 6 ft. by 2 ft. with a depth of about 18 in. These are the measurements of the largest, but smaller graves are also constantly seen, of all sizes down

to that of a very small child showing that these tombs were used for the interment of both sexes and at all ages. The Spaniards of course attribute them to the Moors, a convenient form they invariably apply to everything about which they know nothing. The tombs face all directions and their localities appear to have been chosen solely to obtain a good horizontal surface of rock, free from joint or blemish to work upon. Possibly these rock sepulchres are of Phœnician origin but this is a matter which requires further research.

To revert to the search for our cliff, although less than a mile from the serrated crags on the watershed beyond us, we were separated from them by a deep rocky valley with steep sides overgrown with impenetrable scrub. It became necessary therefore to seek a *vereda* or track down towards the coast several hundred feet below us, so as to cross the valley where it widened out and became more practicable. This we effected and remounting our horses commenced the toilsome ascent of the hill beyond; as we gradually mounted the slope, the feeling grew in me that I had at last found the way to the cliff I sought, nor was I disappointed, for on reaching a plateau and rounding the extremity of a rocky bluff we suddenly came in view of a fine cliff some 300 ft. in height and fronting south-west.

Near its foot was a charming white cottage built on three sides of a *patio* or courtyard which I instantly recognized as a landmark I had noted down in 1884 when on my way to Egypt. The desolate nature of these rocky hills and their inaccessibility may be gauged by the fact that it is easy for a considerable cliff, such as is this, to be thus comfortably hidden away out of sight of most of the surrounding country.

As may be imagined, the view of a cliff from the deck of a steamer some seven miles or more out at sea, gives one but a small conception of its size and more especially of its accessibility and I

was gratified to note that the long-sought-for cliff was obviously well suited as a nesting station for Vultures and was further not of

[A VULTURE'S CLIFF.

so forbidding a nature as to render escalade or descent a matter of impossibility for me, in my crippled condition of that time.

In cliff climbing, as in very many other occupations, nothing

is more hurtful to ultimate success than undue hurry. So we went first to a crag some hundred yards or more from the face of the cliff, whence with field-glasses and subsequently with a telescope, we carefully examined the face of it, so as to grasp its salient features as well as its weakest points.

It required but a very cursory glance to note that a considerable colony of Griffon Vultures were in possession of the caverns and fissures on the face of the cliff, several of the great birds were soaring around in front of it as can be seen in the accompanying picture. A pair of Egyptian Vultures, with snowy white plumage and black-tipped wings, sailed round the lower crags where they were nesting, whilst the warning croak of Ravens showed that they also had an establishment somewhere in the neighbourhood. No Eagles were however to be seen and at this I was not surprised, as Eagles particularly dislike any cliff affected by their big relations, the Griffon Vultures. Possibly they are not proud of the relationship and so avoid them!

The cliff was of a formation very commonly seen in south-west Andalucia and consisted of enormous slabs (originally beds) of sandstone tilted up at a considerable angle, about seventy degrees in this case. Ages of denudation had worn away the overlying soil and loosened the strata from the front and these now formed a steep slope or talus below, densely overgrown with scrub, amid which huge rocks lay scattered. The back of the cliff was likewise denuded for some 30 to 50 ft., the great slabs of solid rock slanting backwards over it and forming in places a sort of pent-roof. The rocky ground here was held up by the natural revetment formed by the mass of the cliff in front of it and extended for some 20 yards or more to the foot of a second cliff, parallel with and of like formation to the first, only on a reduced scale. It is these series of parallel masses of rock, upturned by some great earth movement that gives the

Spanish name of *sierra* "a saw" to the rugged summits of the mountains in Spain.

In my earlier days of cliff climbing I used generally to get to work without delay, often by the admittedly risky and uncertain process of a frontal attack. But wider experience has shown me the wisdom of always seeking to find a way round. One lesson in practical geology begot of repeated experience is that in the case of any upturned strata, such as I have endeavoured to describe, there are almost invariably places where, either owing to want of homogeneity in the rock or other causes, such as resistless pressure, a general state of disruption has been brought about. In such localities great joints and fissures are to be seen and also places where the softer and less enduring portions of the rock have weathered out, leaving deep chasms and caverns not infrequently choked with masses of broken strata and fragments of rock from above. After a rather severe struggle round one of the rocky flanks of the main cliff where our course lay, now along a shelf of some slippery crag and again through the scrub which grew in such abundance upon the successive terraces, we at length reached the rear face of the main summit. Here we were confronted by huge masses of overhanging rock. By scrambling through a narrow gully between two great crags we gained a sort of natural look-out fashioned in the solid rock, probably the result of a slip or slide, the shelf we were on being the top of the moved bed. From this point a good view was obtainable both towards the flanks and below, and we saw that some hundred feet from the summit there was a series of broken ledges and semi-detached crags parallel to the strata of the general face of the precipice and forming the central portion of the Vultures' stronghold. Any further movement from this commanding point was however impracticable, save with the aid of a rope, the cliff below being sheer and unbroken, so we returned through the gulley to the rear

of the crags and renewed our search for some way round. Presently amid the chaos of fallen rocks in the rear, I came on a small cavern and at once proceeded to explore its depths.

Before going very far, it became evident that it was but a portion of a great fissure or joint extending far down into the

THE REVERSE SLOPE OF THE SUMMIT OF THE CLIFF.

(*The entrance to the subterranean passage is immediately above the man's hat.*)

heart of the cliff choked with huge fragments of rocks perched one above another. After creeping and crawling under several of these, now sidling past one or dropping down below another, we reached a point whence, in the dim light of the cavern we could see there was a fall of 15 ft. or so. Down this abyss, owing to the inequalities of the surface of the rock and the narrowness of

the passage, it was simple enough to descend chimney-sweep fashion and as I neared the bottom, I became aware of a gleam of light coming somewhere from the direction where I knew the face of the cliff must be.

This was most reassuring and next moment I found myself at the innermost end of a narrow but lofty cavern, the floor of which sloped steeply away to my front. Proceeding cautiously along this, on rounding a rock I saw in front of me the great untidy nest of a Griffon Vulture literally lying on the sloping floor and about a couple of feet from the mouth of the cavern, which opened out on the face of the main cliff. In it was a baby Vulture, about the size of a duck and covered with white down. The moment it caught sight of me, it, as usual, shammed death, laying its hideous ungainly head sideways flat on the bottom of the nest and remaining perfectly motionless in that uncomfortable attitude.

I was busy getting my camera into position when a great rush of wings told me that one of the old birds was returning. Next moment a Griffon with legs extended alighted with a mighty commotion, on the shelving rock within a few feet of me and just beside the nest. Hardly had it folded its great wings and recovered its balance when it spied me and, turning, dashed off with a great rustle and rush.

Having photographed the young bird, I moved up to the nest and stood on the rock recently tenanted by the parent. I found I had emerged on the face of the cliff, some 200 ft. from its base and perhaps 100 ft. below the summit and was in the midst of the colony of Vultures. On an open ledge across a chasm and only some 15 ft. from me was another baby Vulture in its nest. With a view to seeing what else was near me, I now gave a shout and immediately some half-dozen of these great birds quitted the caverns and fissures in the cliff adjacent to my position. Now ensued a most interesting time for a lover of wild birds in their

haunts. The surface of the rock, though at places nearly vertical, was deeply weathered and afforded me admirable hand-hold as well as good foot-hold for my rope-soled shoes and I was able to traverse the face of the cliff in various directions and visit a number of nesting-places. Being late in the season none of the nests contained eggs, but I was able to get what I had come for, namely, a capital series of photographs of young Griffons in their nests in almost every stage, from the baby in white down, no bigger than a newly hatched gosling, to the lumbering full-grown young bird completely clothed with great brown feathers waiting only the growth of its primaries to take wing and fly away.

Whilst thus engaged with my camera, the old birds kept sailing to and fro above the cliff, their immense wings spread out and apparently motionless with the tips of the primary feathers widely separated. Now and again some anxious mother would come past a cavern I was in with a great swirl of wings and I was able to get several snapshots at such, as they came towards me and before they detected my presence and swung off with heavy flapping wings. Vultures like other large raptores do not realize their power as compared with that of a human being engaged in making his way along some narrow ledge or across the face of a rough crag where a very slight touch would infallibly cause him to lose his balance. That they could easily effect this is certain, but it is equally certain that their inherent dread of man effectually deters them from resorting to tactics so disturbing to the egg-hunter or photographer. Leaving the cliff after a rough descent of the hillside even more unpleasant than the ascent, we at length reached the small white house below.

The view from the vine-covered *patio* was simply magnificent. Far below us the yellow sand of the coastline stretched away for 20 miles to the old fortress and lighthouse of Tarifa, whose white

buildings formed a beautiful contrast to the deep blue of the Straits beyond. Across the water we could discern every feature of the wild rocky mountains of the Barbary coast from Ceuta to Tangier drawn in sharp purple masses of light and shade, whilst the bold headland of Cape Spartel stood up in strong relief against the shining waters of the Atlantic, which seemed from our elevated position to stretch westward until sea and sky merged.

The owner of the ideally placed house I mentioned was a goatherd of some importance, possessed of considerable flocks which found subsistence in the rocky hills of the sierra above. It would be difficult to imagine an instance of any man being in theory so near and yet practically so far removed from the influences of modern civilization. His only idea of civilization was the sleepy and decaying old town of Tarifa and to gain the only road leading thither he had to traverse some seven miles of a stony track, only passable in fine weather. And yet daily, and indeed almost hourly, at his very feet there passed huge vessels both of war and commerce representing the power and wealth of most civilized States on their way through the Straits of Gibraltar.

Postal service, telegraphs, newspapers and the like were all things for which he had no use; he was content to live thus isolated in the glorious climate and to advert with justifiable pride to the *bella vista* from his *patio*, his one and only asset amid the supposed desiderata of modern houses.

Had he ever had a visit from an Englishman before? Yes, once, one had come to look for silver in the sierra where I had been after the Vultures, altho' God knows why silver should grow among rocks. However seeking silver was a thing a man could understand, but Vultures? and pictures of Vultures? what was the use of them?

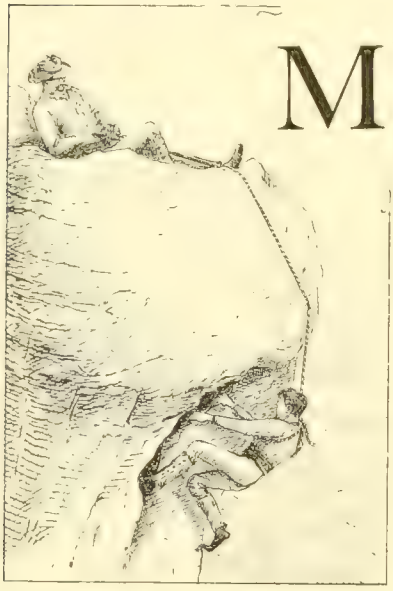
The Englishman had told him he possessed a hidden treasure or gold mine in his garden. But he had never returned. We had

farewell to our host, not omitting the remarkably pretty daughters of the house which the prospecting Englishman may possibly have had in his eye when he spoke of the treasures in the garden.

CHAPTER II.

THE LESSER BIRDS OF THE SIERRA.

The varied attractions of the Sierras—Moorish and Roman remains—A race of rock dwellers, a subject for antiquarian research—The Common Wren—The Crag Martin—A swim for a nest—An unlucky "identification"—The Blue Rock Thrush—The "Sparrow alone upon the housetop"—Exceptional powers of dissimulation—An awkwardly-placed nest—Vain regrets—Young Blue Rock Thrushes—A sweet songster—Search in sea-cliffs—Nest in Charles V.'s Wall—Riflemen on guard—A long-deferred victory—The Black Wheatear—A most retiring species—Repeated failures to find nest—The sentry-box and the Black Wheatear—The *Pedrero*—Curious habit of building nest with stones—A remarkable nest.



MY original object in penetrating into the more remote parts of the country was to see certain species of birds in their haunts; but from the very first I realized what exceptional opportunities were thus placed within my reach, not only as regards the birds and their nests but almost every other branch of natural history. In a wild country such as I have endeavoured to describe hardly a day passes without one seeing some animal, reptile or insect which cannot fail to arouse the interest of the most unimaginative. The extraordinary wealth of flowers and flowering shrubs, the diversity of those

composing the so-called scrub as one penetrates from the low-lying country into the valleys of the sierras, alone makes a most fascinating subject for observation.

And in addition to the Zoology and Botany, what marvellous geological formations present themselves to the traveller amid the great tangled masses of the sierras and their surrounding foot hills. And again who could fail to draw inspiration from the mysterious remains of bygone ages which are to be found in the least frequented and apparently utterly uninhabitable parts of this country? Naturally enough Andalucia abounds with wonderful relics of the Moorish dynasties which endured for over 700 years and of which the most modern must date at least from some time in the fifteenth century. During some of my climbs to the summits of remote and unsignified cliffs I have come across the remains of well-designed and strongly built forts, clearly the work of the Arab invaders. Again I have met with elaborate Roman ruins dating possibly from 2,000 years back. But beyond and in addition to these are the various rock fortresses, dwellings, sepulchres, cisterns with steps and fortified approaches, all cut out of the solid rock, of the creators of which I have been unable to obtain any information at all, although I have spared no trouble in the matter. Who the races were who thus dwelt in these desolate spots in the sierras, accessible only by tortuous goat-tracks and often involving some stiff climbing, is to me at present an insoluble mystery. I venture to mention the subject here in the hope that some readers of this book may be antiquaries who will follow up the matter.

But I must go back to my birds. Amid the caverns and crannies of the mountains, both limestone and sandstone, there is a bird-life all of its own. True is it that some of the species, as will be seen, are found in other situations, but those which I describe form part and parcel of the life in the more remote places, where Vultures and Eagles seek for peace and security. First and

foremost comes one of the smallest of European birds, the Common Wren, which inhabits the wildest and most desolate hills and shares with the big Vultures the deep caverns hundreds of feet above the sea level. Wherever suitable sites are to be found, for example among the innumerable "pockets" with which the roofs of the sandstone caverns are pitted, there may the Wren be reckoned to breed, making its snug nest of the materials nearest at hand.

One of the things that most deeply impress my mind when, after a hard struggle, I have gained the summit of some great cliff, is the absolute silence around. The Vultures may glide overhead or sweep past hundreds of feet below, but never a sound do they utter. The same with Eagles or with the startled Rock Doves which dash out of the caverns hard by. Suddenly close alongside, the silence is broken by the shrill cheery song of the Wren! No height seems to be too great for this undefeated little bird. At the very summit of a great cliff, whose base lay in the cork woods over 500 ft. below, I have found a Wren's nest built in a hole in the same cavern and in close proximity to that of the huge Griffon Vulture. In this instance the Wren had constructed the external part of the nest almost entirely from the Vultures' feathers, the lanceolate ones from the ruff forming a feature in the architecture, whilst the lining was composed of the snowy white fleecy down which forms the underclothing of the Griffon.

One of the most widely distributed among the smaller birds of the sierra is the beautiful little Crag Martin (*Cotyle rupestris*), which to the uninitiated bears a likeness to our own Sand Martin (*Cotyle riparia*). Some of these birds winter in southern Spain sheltering among the deep ravines low down in the sierras where they are protected from wind and weather. Their numbers are largely increased during February. They build a nest of cemented mud, cup-shaped similar to that of our Common Swallow (*Hirundo rustica*)

and, *not* like the House Martin, usually in the roof or on some inaccessible ledge of a cavern. Several pairs often nest together. The nest

SANDSTONE CAVERN ABOVE POOL IN BED OF TORRENT. NESTING-PLACE OF THE CRAG MARTIN.

is warmly lined with feathers and the eggs, four to five in number, are white, spotted with grey and rusty-brown and closely resemble

lighter coloured varieties of the Swallow's. Considering the abundance of this species it is curious how rarely its nest is found in accessible spots. After four years of disappointments, I watched a pair enter a rocky cavern below a waterfall in a deep water-worn ravine. To get at this nest I had to be lowered some 15 ft. to the pool below the fall and since we had no ropes, this had to be done with the aid of our *fajas* (known to Anglo-Indians as cummerbunds) knotted together. I then swam across the pool and entered the cavern, in the roof of which was a nest with four eggs. Sad to relate, so obsessed was I with the idea that this Crag Martin built a nest similar to our House Martin and laid white eggs like it and the Sand Martin that I imagined the nest and eggs I had found belonged to the Common Swallow, of which there were some also about, and so abandoned my prize! My disgust upon learning, some months later, that I had actually had the eggs I longed for in my grasp may be best imagined. Owing to the fact that I am rarely in the sierras at the season when the Crag Martins lay, many years passed before I had another opportunity of getting this nest and it was not until 1901 that I at last succeeded! Truly a little knowledge is a very dangerous thing, at any rate as regards the identification of eggs!

Besides the Crag Martin, the House Martin (*Chelidon urbica*) nests in abundance in certain parts of the sierra.

Without doubt the most conspicuous and best known of all the cliff-haunting birds is the Blue Rock Thrush (*Petrocossyphus cyanus*), known to the Spaniards as *Solitario* from its habit of sitting alone, perched on the summit of some crag or, if near inhabited places, on the top of some commanding building. I believe I am correct in saying that it was this bird that David had in his mind when he described himself as watching, "as a sparrow alone upon the house-top," and further that some learned ornithologists attempted, but without success, to have this apparent error amended in the Revised Version.

The Blue Rock Thrush is a delightful bird to watch, alike in its wild state and when in an aviary. I have reared several from the nest and so can testify to their engaging habits. They are extremely wary, as all who have ever striven to find their nests will testify, and I verily believe that when they have reason to suspect that they are being watched, they will go to great pains to mislead the enemy by simulating an immense interest in some crag where they are *not* nesting. Anyway such has been my experience, year after year, and I have repeatedly witnessed and suffered from such tactics. Naturally enough, as soon as I made the acquaintance of these birds I set myself to discover their nests. Here for a time at any rate, I met with more than my match, and for three years in succession I was fairly beaten. Thus in 1875 I was ignorant of their time of nesting and only found a nest on 22 May, when the young were fully grown and on the wing. In 1876 I was equally unsuccessful. In 1877, when engaged in watching an Eagle's nest with Major Robert Napier (now Lord Napier of Magdala), we noticed a pair of Thrushes which were evidently nesting not far off. Eventually, the hen carrying a centipede in its beak, flew up to and entered a deep vertical cranny in the cliff close to the Eagle's nest. The crag was not 40 ft. high and the cranny only a few feet below the edge and just below an overhanging piece of rock. Napier lowered me down and after some trouble I got my toes well jambed into the crevice and somehow managed to haul myself in under the rock and reach the nest which contained five young birds fully fledged: these I transferred to the bosom of my shirt. The return journey up—there was not enough rope to lower me down—involved an awkward struggle both for myself and my companion, for of course as soon as I let go of the rock I swung outwards and demonstrated the mistake of one man lowering another single handed at a point where there is no handhold for the climber. I made a sketch of

this crag from which the head-piece to this chapter is taken, on the spot. I ever retain a lively recollection of the incident owing to my comrade upon some subsequent occasion when I annoyed him more than usual, having expressed his fervent regret at having "ever pulled me back up that cliff"!

The young Thrushes obtained on this day proved to be most amusing pets, eventually finding their way, some to the aviaries at Lilford and some to the Zoological Gardens, where they had more scope for their antics than when caged.

In 1878 my attempts to get the eggs of this bird were unceasing. On 23 March I found a nest ready for eggs in a low cliff, but the old birds, which watched me closely when I climbed to it, forsook it and moved elsewhere. On 10 May I recovered the lost clue and found a nest with five young just fledged within 20 yards of the nest of 1877, and on 18 May yet another nest with four young in a hole in the roof of a big cavern but still no eggs.

I reached this nest by the old birdsnesting expedient of building up a human pyramid of my brother subalterns, the base being formed by Henry Prittie (now Lord Dunalley), the middle portion by Fergusson, and the apex by me. Having erected the structure against the wall of the cavern, Prittie cautiously stepped backwards until I was exactly under the nest.

In 1879, warned by previous failures, I commenced operations earlier, and even on the days when I was prevented by my military duties from leaving the Rock I devoted all my available time, on guard or off guard, to watching suitable cliffs. At this time an old cock Blue Thrush in his beautiful plumage used to come daily to the cross on the top of the South Chapel and sit there for hours, from time to time uttering the short sweet song so often heard in the remote sierras. I watched him fly to Rosia Bay where I spent no less than six days in March watching the movements of a pair in the sea-cliffs.

At this time Lord Lilford was at Gibraltar in his yacht the *Glow-worm*, and with the assistance of his son, Thomas Powys, and some of the crew I was lowered over the cliffs between the New Mole and Camp Bay in all directions. It was now that I learnt by painful experience the deceptive ways of the Blue Rock Thrush. One of their practical jokes was to simulate great interest in some cavern or fissure in a cliff and to disappear into it for a considerable time with the result that I was committed to a perilous descent only to find that I had been grossly imposed upon. At last on 5 April we decided that there must be a nest in a cave below Parson's Lodge Battery. This happened to be quite inaccessible from above so I swam out from Camp Bay and scaled the cliff but found nothing. I realized however that between sharp rocks, barnacles and thorny scrub it was an overrated amusement to go birdsnesting unclothed.

One day in April when subaltern of the Ragged Staff Guard I noticed a pair of Blue Rock Thrushes playing about Charles V.'s Wall high above the town. The next day as soon as I was relieved from off guard I went to Gardiner's Battery whence I could command a view of the suspected area and lay up. From what I there saw I moved on to the foot of the North Flat Bastion and concealed myself in the scrub about 30 yards from the escarp. After an hour's waiting I noticed the old cock bird, which had been endeavouring to attract my attention by various weird antics on the top of the wall, become somewhat solicitous in his demeanour. Remaining motionless I had the good luck to detect, out of the corner of my eye, the hen as she slipped out of a weep-hole in the bastion about 30 ft. above me. I kept quiet and soon she re-entered the hole! I now made my way to the top of the bastion and, leaning over the wall, touched the weep hole with a stick—it was only a few feet from the top—when out flew the bird! I now felt certain of my prey.

But even now I had to exercise patience, for the Duke of Connaught who was then serving in the Rifle Brigade was on a visit to Gibraltar on the occasion of his honeymoon and this sadly complicated my arrangements for we had to parade on the Alameda

A SANDSTONE CAVERN NEAR A SUMMIT OF THE LOWER SIERRA.
NESTING-PLACE OF THE BLUE ROCK THRUSH.

for his inspection. I recall now how whenever I was not "standing to my front" I had an eye trained on that weep-hole in the old bastion! Immediately after our return to barracks I got into plain clothes and, seizing my coil of rope, started off for the bastion. Here there was a Corporal and three Riflemen on guard.

The sentry and inevitable cook deducted, this gave me two men to lower me over the edge. As I came opposite the weep-hole I saw to my intense joy a nest of fibrous roots containing five beautiful pale blue eggs! These were, as is their characteristic, most delicately transparent, thus differing from the eggs of our Starling which are more opaque. Thus in the fifth year of my labours did I at last attain success. Since then I have, from time to time, when exploring caverns or working my way amid crags or across the face of some big cliff, come upon many nests of this bird. Owing to the peculiarly sheltered situations in which they build, their nests remain for years in very fair preservation; hence the climber sees many more nests than there are pairs of birds in the locality. On three occasions I have thus chanced upon nests with five eggs and on others some containing less, but none of these has given me the same sensations of victory achieved that I experienced on that day in April 1879, when hanging on my rope adown the face of the old bastion at Gibraltar I first set eyes on those blue eggs.

The Black Wheatear (*Saxicola leucura*), although at times very much in evidence, is like all the Wheatears a master at the art of skulking and keeping out of sight. The male is a handsome fellow, jetty black with a very conspicuous white patch above the tail whence his popular name of *El Sacristan;* in the female the black plumage is replaced by a more sober brown. In many of their habits they resemble the Blue Rock Thrush, and they occupy identically the same terrain, nesting in caverns often at the very summit of the lower sierras.

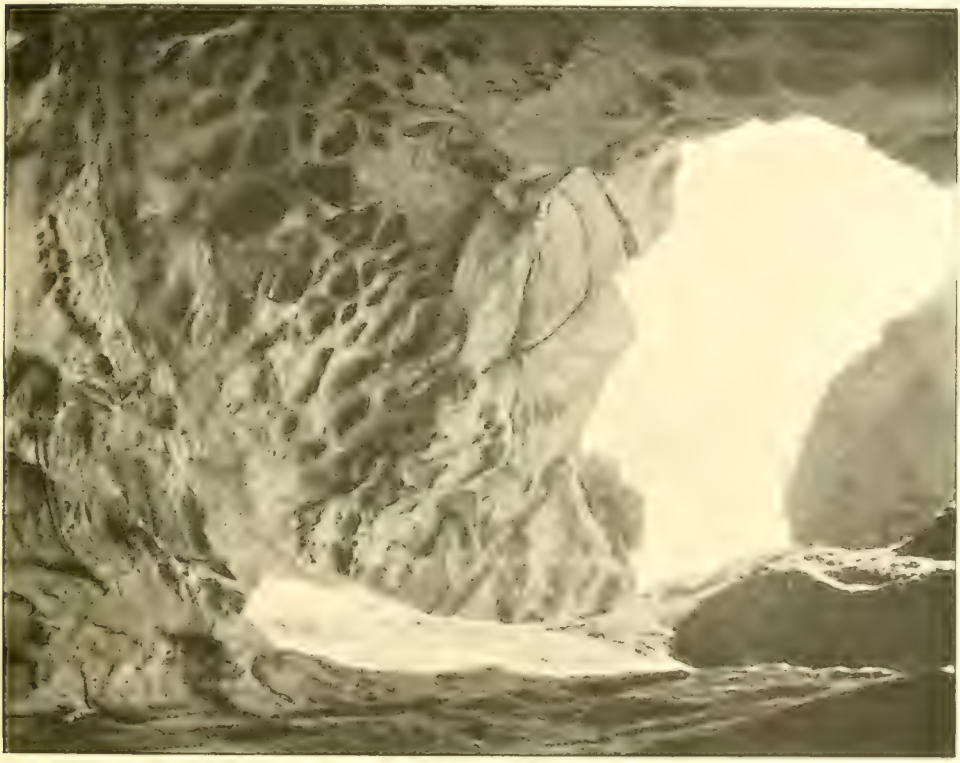
My quest of this bird's nest was even more prolonged and difficult than the quest of the Blue Rock Thrush's, nor was it marked with the same success, for to this day I have never yet found a nest with the full complement of fresh eggs.

In March 1875 I watched a pair in the Europa ravines and at

length discovered the nest placed in a small hole in the face of a cliff. Most unluckily the female was shot before she laid and thus I lost the one good chance of my lifetime. The following year I was entirely unsuccessful in finding these birds in situations where I could watch their movements. In 1877 I noticed a pair frequenting the same ravine where I had found the nest in 1875. In the interval a big powder-magazine had been built close to the cliff where the old nest was and the inevitable sentry had of course been posted on the magazine, which, by the way, I rather think was empty at this time. For several days I watched these wily birds without any result but I learnt from a Rifleman on sentry that, when I had gone away, the birds came down and played about the magazine and cliffs adjacent to it, taking small notice of him. The solution was obvious. I would take the sentry's place. So inducing him to extend his beat to the furthest legal limit I slipped into his sentry box and with my eye at the peep-hole in the side waited and watched. In a very few minutes a Black Wheatear appeared on the cliff not 50 yards off and, after watching the sentry turn his back, flew straight towards me and entered one of the red-tiled ventilators of the magazine! Procuring a ladder I went up it and found the nest placed a couple of feet inside the shaft. Alas! it contained four young birds just hatched out!

On 1 May of the same year, as I entered a cavern near the summit of a small cliff I was climbing, a Black Wheatear flew off its nest which was placed in one of the sandstone "pockets" in the roof. This was the first nest I was able to examine properly and was naturally immensely struck at seeing that the lower portion of the nest was composed of stones of various sizes, some as large as walnuts. At the time I had never heard of this singular custom of the Black Wheatear which has earned for it the title of *Pedrero i.e.*, the stone-quarrier, among the folk of the sierra. The nest

proper was built of bents and fibres and lined with wool and a few feathers. It contained four pale blue eggs marked with a rufous ring at the larger end, in size they were between those of our Wheatear and the Blue Rock Thrush. They were alas! on the



CAVERN NEAR A SUMMIT OF THE LOWER SIERRA SHOWING CAVITIES FORMED BY SAND-BLAST IN ROCK. NESTING-PLACE OF THE BLACK WHEATEAR.

(*The nest is in a cavity immediately above the field-glasses.*)

point of hatching; so I lost the only chance I have ever had of getting a perfect set of eggs of this curious bird.

Although I have found many nests since, the majority have been empty and a few contained young birds; such are the ups and

downs of birdsnesting. As a rule, it has been quite impossible to revisit those nests (which no doubt would shortly have contained eggs) owing to the remote situations in which they were placed and my being at the time on the line of march.

Some nests have merely a few stones below them, whilst others have a considerable number and others, again, a regular rough rubble wall built up in front of the nest.

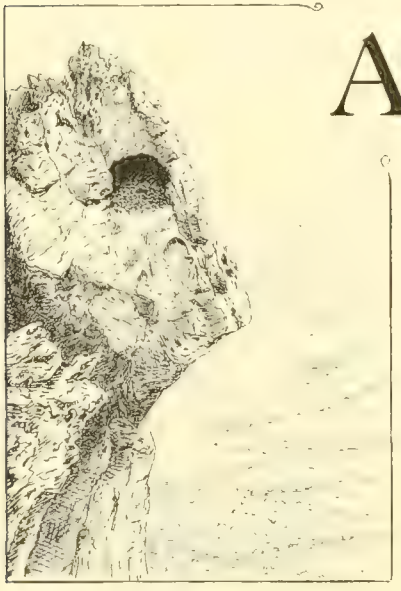
One of the most elaborately constructed nests I ever saw was built in a cavern in a big sandstone cliff. I was exploring some crags at the time and had left Colonel Irby some distance down below. The cavern was almost circular and about 12 ft. in diameter and 6 ft. in height and the walls and roof were, as is so frequently the case, honeycombed with small cavities, similar to those shown in the preceding pictures. In one of these, measuring 9 in. across, was this most interesting nest. Seeing what a remarkable one it was, I descended and induced Irby to come up and see it and with his aid made a careful examination of its materials. In front of the nest was a rough wall 9 in. long and $2\frac{1}{2}$ in. in height and of some thickness. I removed the stones composing it and we found they numbered 282, of all sizes from a walnut to a pea. We then lifted the nest out; it was built of grass and fibrous roots lined with the fine fibres of the palmetto. Below the nest was a foundation of seventy-six large stones making 358 in all. The largest stone was 2 in. long by $\frac{3}{4}$ in. wide and $\frac{1}{2}$ in. thick and weighed 2 oz. and there were many others weighing between 1 oz. and 2 oz. The total weight was over 4 lb. 8 oz. The most noticeable point was that, with the possible exception of a few small flakes of sandstone, all these stones had been carried by the bird for some distance. How such a small bird conveys the larger stones found in these nests is ever a puzzle to me. That they do carry them and bring them from a considerable distance is capable of proof. Thus of late years, several

pairs have taken to nesting in the weep-holes of the tunnels of the railway in the Ronda Mountains. From one of these weep-holes over 8 ft. from the ground I took a collection of stones, some being water-worn pebbles obviously brought from the bed of the gorge some 30 ft. below the railway line. The largest of these weighed $2\frac{1}{2}$ oz.

CHAPTER III.

IN THE UPPER SIERRA.

Extreme wildness—Changes in vegetation—Little-known tracks—Smugglers and their foes, the *Carabineros*—Cheery companions—The limestone mountains—Cultivation under difficulties—Tobacco growing—A fight for a crop—Natural fortresses—The hidden Moorish villages—Mountain gorges—A deep ravine—Subterranean streams—Old limestone formations—Dangerous climbing—An unpleasant experience—Denuded crags—*El Cuchillo*—Ibex—A lost opportunity—Wolves—A desert of rocks—Absolute solitude—Choughs, Alpine Accentors, Rock Buntings and Peregrine Falcons—Sierra de Libar—Brigands—*Secuestradores*—The brothers Bonel—The Guardia Civil—A forbidden district—The fate of "Monte Cristo"—The fascination of the Sierra—Marvellous panoramic views.



ALTHOUGH the height of the lower sierra in south-west Andalucia only averages between 1,500 and 2,500 ft. above the sea, the greater part of the country it includes is of extraordinary wildness. Less than 1,000 ft. up the whole of the flora and vegetation undergoes a marked change and as one ascends higher, the oleander, which fringes every stream in the lower-lying districts, is replaced by rhododendron, arbutus, laurestinus and other ever-green shrubs, giant white heath, often 10 to 15 ft. high taking the place of the red heather of the lowlands. Roads, in

the ordinary sense of the word, there are none and the tracks available for pack-animals are few and far between; but there is a perfect network of *veredas* or foot-paths, many of which are unknown to any, save those who live in their immediate vicinity, or to the gangs of smugglers who habitually use them in their nocturnal marches. These daring fellows carry immense packs of tobacco, often weighing over 100 lb., and in defiance of the legions of *Carabineros* or "preventive men" who picket the whole country with horse and foot in the most elaborate manner, contrive by means of forced marches by night and hiding amid the rocks and high heather by day to run their cargoes.

Sometimes when climbing about near the summit of some lonely sierra, I have come across a gang of these wild folk, lying concealed in some rocky ravine. Although it is at times a matter of life and death to them should their hiding-place be discovered by their natural enemies, the *Carabineros*, when I have suddenly come upon such a party, they have shown absolute confidence in me and have been most courteous and cheery. They are reckless light-hearted folk and usually make jokes as to my evidently having been a *contrabandista* myself in my young days, for how else could I know their favourite *veredas* as I do? "No other Englishman comes to such places."

As the traveller works northward and eastward from this region the sierra gets higher and higher, the Serrania of Ronda being from 4,000 to 6,000 ft. above the sea. Eastward again it rises until the Sierra Nevada is reached of which the altitude in places is over 11,000 feet. The lower sierra has been already described. In the higher parts, towards Ronda, the physical conditions are widely different from those in the lower sierra. To begin with, all this part of the country is of limestone formation and the slopes are far steeper and the cliffs more frequent than in the sandstone region.

Despite the enormous amount of rock there is a good deal of

cultivation in places. Every available piece of ground is cleared of loose rock and boulders, which are heaped up in cairns at intervals or built into massive revetments to hold up the soil in terrace above terrace. In the small patches thus cleared many vines are planted, also olives and almonds, whilst higher up wheat is everywhere grown.

Amid this extraordinary desolation of rocks now and again when traversing the upper sierra you come upon a natural basin of rich soil, surrounded on all sides by big rocky hills and cliffs. These spots vary from only a few rods of level ground to twenty acres or more. Owing to the soakage of the rainfall from the surrounding cliffs these are often well watered and bear excellent crops. I know of more than one such place where I have found tobacco being grown in defiance of the *Carabineros* and all the myrmidons of the law. Indeed at one spot, not many years since, the wild folk of the sierra absolutely refused to discontinue their illicit cultivation and reinforced by various parties of smugglers resisted by armed force the detachment sent to overawe them. The scene of this affray was a remote mountain village perched amid the hills, access to which is along a steep mountain path, so steep as to necessitate stone steps at places. This track leads through a narrow rocky gorge, only a few yards wide, easily defensible in the olden days by determined men armed with sword, spear and arrows. Modern weapons have however rendered this and many another similar mountain-fastness difficult to hold, since in such rugged country there are ever points within rifle range which command them. Hence they have lost their traditional security from attack.

One of the many interesting things in this interesting region is the numerous old villages of Moorish origin hidden away in secluded valleys in the higher part of the sierra; the names of many of them are reminiscent of the centuries of Moorish occupation, each one owing its situation to some good natural supply of water such

as is found at intervals in this marvellous limestone country. Where such an advantage could be combined with a good defensible

ONE OF THE OLD MOORISH VILLAGES IN THE UPPER SIERRA.

post, large villages sprang up. Each one of them was in communication with at least one other, either by direct view from some building or by the construction of some watch tower on a com-

manding point to link up the two places. Sometimes, on reaching a high point on some big cliffs, a compact little town with white-washed buildings surrounded by ruined walls has suddenly burst upon my view, nestled away in a secluded valley many hundreds of feet below, of whose existence I had hitherto only known by report.

Judging from the number of these villages—in one district there are no fewer than sixteen within a seven-mile radius—there must have been a very large population here in the days of the Moors. Now, many of the villages are more than half in ruins and I know of at least one extensive village which is almost deserted, the chief inhabitants being a small detachment of *Guardia Civil* and those few engaged in the cultivation immediately around.

The rivers and streams of this region are most interesting to the geologist. The Guadiaro River which divides the famous *Tajo* or cliff at Ronda has lower down in its course eaten its way through the limestone mountains in a marvellous manner. The most remarkable point is near Gaucin where it passes between two vertical cliffs only a few yards apart and 400 ft. in height. So close do these great cliffs approach one another that here and there a big crag fallen from above is wedged in and forms a natural bridge. Here, the Guadiaro, after passing over a series of cataracts takes a final plunge into a dark abyss and emerges about a quarter of a mile lower down 100 ft. below the level of the entrance. Several friends of mine, during dry seasons when there is little water in the gorge, have endeavoured by swimming and wading to pass upwards through this mysterious natural tunnel but have been invariably baffled by a series of slippery water-worn weirs of natural rock in the gloomy caverns into which they have penetrated. Were I sound in wind and limb I should certainly try to pass through from above with plenty of rope to secure my retreat.

The view of this gorge from the lower side is most magnificent.

A small colony of Griffon Vultures has nested there and doubtless will continue to nest there for all time since few climbers would feel

A GORGE IN THE UPPER SIERRA.
The River Guadiaro runs about 400 *ft. below the portion here shown.*

inclined to molest some of their breeding-stations. There are few places so easily accessible to view as this beautiful gorge for those

who wish to see these grand birds on the wing. A pistol-shot will always cause them to come sweeping out of the chasm they frequent as well as bevies of Rock Doves who also find security in these fine cliffs. On several occasions I have seen Cormorants fishing in

LA CUEVA DEL GATO.
Whence issues a subterranean stream.

the cataracts below and when disturbed they have flown upwards and circled aloft many thousands of feet above the sierra, after the fashion of Vultures, before making off sea-ward.

The most impressive view of this gorge is from a projecting

crag close to the summit known as *El balcon*, a natural balcony of rock, whence a stone can be dropped into the boiling stream 420 ft. below.

The most interesting subterranean stream I know is one not far from Benaojan which emerges from a huge cavern, over 60 ft. in height, known as the *La Cueva del Gato* (the cat's cave) due to its supposed resemblance to a cat's head and eyes. The roof of this cavern is closely studded with hundreds of the mud nests of the House Martin, which are built close together, in many instances overlapping. The general effect of these as viewed from the stream 100 ft. below is that of a mason-wasp's nest on a gigantic scale. This stream emerges in considerable volume at a point about 1,450 ft. above the sea. For a long time I was uncertain whence it came, but a few years ago, when travelling through the sierra some miles to the north, I came upon a swift-flowing stream which I was assured disappeared into the earth. Two years later I had an opportunity to verify this and chancing to be in the neighbourhood in the late spring when the water was low, we followed the stream down until it entered a narrow gorge between vertical cliffs. Working along the top of these we at length reached the edge of a deep ravine ending in an amphitheatre of rocks. It was truly a weird spot; we were walled in by a series of cliffs 300 ft. high or more and above these were rocky terraces surmounted by two huge pinnacle crags 300 ft. or 400 ft. still higher, about which a pair of Golden Eagles were playing. Descending the cliff for 320 ft. we reached the stream which here enters a huge vertical chasm over 150 ft. in height and disappears from view round an elbow of rock. It was a most remarkable spot, for from the whitened and polished rocks in the bed of the stream where we stood we could look up and see, over 1,000 ft. right above us, the dark peaks, with the brilliant blue sky and drifting masses of white cloud above all.

That this stream is the one which emerges at the Cueva del Gato, some miles distant, I have no reasonable doubt. The

A BIG CAVERN IN THE UPPER SIERRA.
Point where subterranean stream enters.

difference in level, according to barometric readings, between the points of entrance and exit is about 450 ft.

During my wanderings I have come across several such subterranean streams but in no other instance have I been able to trace their exit. Of course at many places, especially near villages in the sierra, it is a common sight to see an abundant stream issuing from some cavity in the living rock, sometimes turning the big water-wheel of a flour-mill, only a few feet from its source.

Doubtless owing to the great age of the limestone and the extreme alternations of temperature between tropical heat and winter frosts it must have undergone for countless centuries, many of the sierras near Ronda are in a very disintegrated condition which makes them particularly dangerous for climbing as will be seen in my accounts of taking sundry nests in this district. Rocks which are thus weathered assume most fantastic shapes and are frequently known to the people of the sierra by appropriate names. Sometimes, near the very edge of a cliff a most inviting natural balcony will proffer itself as a point of vantage whence to get a good view of the precipice below. I was standing on one of these in the sierra north of Marbella and, anxious to examine a cavern which looked like a nesting-place, leant my weight on the natural parapet in front of me and craned over. Suddenly I felt a tremulous motion and by a great effort threw myself backward just as my stone balcony, weighing several tons, slipped off its ledge and disappeared with a roar several hundreds of feet down a singularly nasty precipice. It was my first experience of this sierra and caused me to make a vow to be more careful in future.

Not far from the same cliff is a curious saddle-back or "nek" of uptilted strata joining two big hills. Centuries of denudation have caused the rocks and soil on either side to fall away until the track along the summit has been narrowed at places to a few feet. Such is the optical illusion caused by this spot that when crossing it, particularly on a windy day and with drifting clouds below, it is not difficult to imagine that you are on a razor-backed

ledge, in fact the Spaniards style it and similar spots *El Cuchillo*, the knife-edge. To anybody accustomed to heights it is of course a place of no account, yet I have known good sportsmen, who have been compelled to cross it in pursuit of ibex, speak of it with bated breath. My Spanish companions on the occasion of my visit, men of the sierra, regaled me with a story how once an Englishman, finding himself in the middle of it, had laid himself down and held on to the mountain with both hands!

This mountain is one of those—there are many—where the Spanish ibex still holds its own. On various occasions when seeking nests or watching Eagles, I have come across these animals, sometimes in considerable numbers. One day I chanced to see about twenty-five feeding together on a rocky hillside on the grassy patches amid the cistus scrub. I was high above them and they had no idea of my presence and presently began to move off slowly westward, feeding as they went. My route home lay along the bed of a steep rocky gorge and reckoning that they must cross this I worked along it very quietly, keeping a sharp look-out, and had the good fortune to intercept the herd and get within 60 yards of it. There were nine bucks, three with very fine heads (of course, larger than any I had ever seen), two ordinary and four smaller ones. It was 17 March. I had no rifle with me and so after watching them for some time at close range, I showed myself, when they made off slowly up the hill.

When I first went to Spain there were still a few wolves in these sierras but they have been almost exterminated by poison owing to their depredations among the sheep and goats. The last one to my knowledge was seen by the late Major Harry Fergusson when out after ibex and passed close to his comrade who, despite Fergusson's adjurations, refrained from shooting it as he imagined it must be a big dog! From what I hear, the numbers of both Bearded Vultures and Eagles have been sensibly reduced by this habit of laying poison for wolves and foxes.

Some of the summits of the Serrania de Ronda present an almost unique scene of desolation. Countless ages of climatic influences have so denuded the surface of all soil that there are at places many square miles where the surface is of rock and rock alone.

In addition, the action of rain and snow has enlarged the joints in the rock surface, in some cases to inches and in others to several feet in width, whereby the general surface is divided and subdivided into innumerable detached masses separated by vertically-sided ravines. At the foot of these a certain amount of soil has been formed, and here fine grasses as well as flowers are to be seen. Now and again a particularly insistent wild olive finds sustenance at the bottom of one of these fissures and its upper branches appear above the general waste of broken-up rock.

Save for a passing Eagle overhead, this region has hardly any bird-life. Rarely is the silence broken by the cheery call of the Chough (*Pyrrhocorax graculus*). These birds, both in their cry and sociable habits, very much resemble our Jackdaws. They nest in small colonies, usually in the most inaccessible places, an especially favourite one being a cavern or shelf of rock below some big overhanging crag. One of the few species met with in these stony wastes is the Alpine Accentor (*Accentor collaris*). They are extremely tame and usually appear to be so engrossed in their search for food about the small grassy patches amid the rocks as to pay but little attention to the passer-by. Another species haunting the higher sierra during the nesting season is the Rock Bunting (*Emberiza cia*), a bird which is assuredly more stupidly tame than the Corn Bunting and will often continue to hop about the surface of some rock and feed unconcernedly within a few yards of anybody who may pause to watch its movements.

Peregrine Falcons (*Falco peregrinus*) are to be met with at intervals. I once found three eggs of this species laid in the disused

nest of a Bearded Vulture. Kestrels are, as might be expected, ubiquitous as also are Rock Doves.

The higher summits of these limestone mountains are composed of a series of pinnacles of horizontal strata much weathered, as can be seen by the accompanying photograph of the summit of the sierra near Jimera. This was taken at a height of about 4,100 ft.

A SUMMIT IN THE SERRANIA DE RONDA.
(*Carboniferous limestone.*)

One of the largest of these desolate stony hills is the Sierra de Libar which rises to considerably over 5,000 ft. For many miles around, its white stony surface bare of any herbage, dominating this portion of the sierras can be singled out from among the sea of surrounding mountains. On most sides it is scarped by precipices or by steep slopes of broken rocks fallen from above, making access to its higher parts difficult and toilsome. A few rarely used

veredas pass through this waste of rocks. It was here that a famous brigand, popularly known to his admirers as "Monte Cristo," or as "Cristo," was eventually brought to book. I am aware that a book on Spain without some account of brigands is popularly considered incomplete as one which deals with the Peninsula without a description of a bull-fight. Despite many years of wandering in remote spots, I have no adventures with brigands to retail and I make the confession with equanimity, for it is at best a very one-sided game to play at. Of course during my time there have been instances of brigandage and the old system of capture for ransom by the gentry known to the inhabitants as *secuestradores* has been put into practice from time to time. When I first went to Spain, the famous incident of the capture and ransom of the brothers Bonel had only just been concluded. This occurred literally under the guns of Gibraltar. I met both brothers constantly and it was always a standing joke that after their unpleasant experience they ceased to take any interest in riding out into Spain and were content to take their daily horse exercise within the British Lines.

Probably the reason why I have escaped any trouble is first, because those engaged in the interesting task of capturing people and holding them for ransom have an extremely shrewd idea as to the monetary value of their quarry and, secondly, they are quite sharp enough to realize that as a general rule it is best to leave Englishmen alone, owing to the probability of energetic action being taken to put a stop to their trade.

That admirable body, known as the *Guardia Civil*, make it their business to look after the safety of any travellers, especially travelling Englishmen; and since their motto is eminently "prevention is better than cure," they take steps to prevent people going into any district which they know to be infested by dangerous characters. Thus, some fifteen years ago, I was anxious to explore

a certain sierra for some nests, but in reply to my enquiries the *Guardia Civil* absolutely forbade me to go into it on account of a well-known *partida* or gang under a certain José, I forget who. Two years later when again in the same district, I received a visit from the *Guardia Civil* and was told that I might go where I pleased. "What about José?" I asked. "Oh!" replied the corporal with a smile, "he is all right, I shot him: see here," with which he produced with great delight the small book carried by these excellent fellows in which they enter a full description of the folk they have to deal with, either as "wanted," "prisoners" or "how disposed of."

The last occasion when there was any trouble in the Serrania was when the already mentioned Monte Cristo was conducting operations. After many delays, a determined attempt to capture him was made and his gang was broken up. Cristo and one comrade took refuge in the wilderness of the Sierra de Libar and one morning early was surprised in a goatherds' cottage or shealing in a remote valley near the summit. I chanced to be passing the spot some months later and had the tale from a man who had been in the Sierra at the time and who pointed me out the various points of interest involved.

Cristo appears to have received warning of the approach of the enemy and with his one remaining adherent bolted from the cottage and gained cover amid a small mass of broken rocks on the open stony hillside a few hundred yards above. Here he turned to bay and when the *Guardias* attempted to close on him kept them at a distance with his Winchester repeating rifle. Numbers however prevailed and the *Guardias* gradually worked round the flanks across the broken ground and brought a fire to bear on him from three sides. At last his fire ceased and they rushed in, only to find his comrade lying wounded and Cristo himself dead, killed apparently by the bursting of his Winchester repeating rifle,

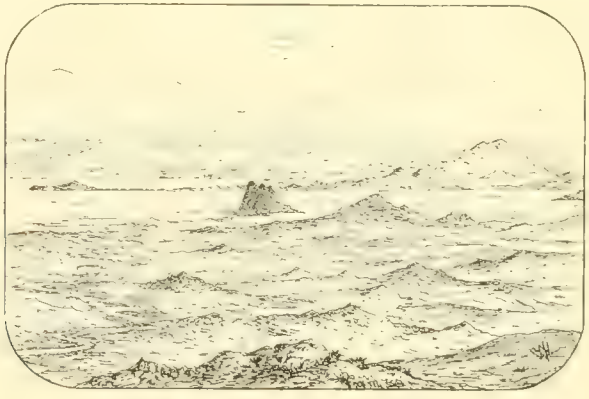
which had been struck by one of the *Guardias'* bullets. His body was tied upon a donkey and with difficulty, owing to the extreme roughness of the country, conveyed to the valley below whence it was taken to Ronda and exposed in the market-place for some days, in order to assure all concerned of the fact of his death. But it is hard to convince some people, and not least, my old friends of the sierra, for to this day it is said and popularly believed that the man the *Guardias* slew was not Cristo at all, who they assert had made arrangements involving certain pecuniary considerations to get another man captured in his place, he undertaking to leave the district for good and all. Of the truth or falsity of this tale it is obviously impossible to determine, but only a few months since when I asked a man who looked as if he might have been a disciple of Cristo how the latter fared, he smiled and with a wave of his hand replied genially "He is well, he's gone to the north."

It would be impossible for me to attempt to describe the fascination which this forbidding region exercises over me and equally over those I have taken through it. I have seen it under all conditions; of a summer's day when the sun's rays strike on the rocks around and make the valleys a very inferno, or in mid-winter, either in the rainy season when every valley contains a roaring torrent or again in hard frost when even the quick-running streams are frozen over and the ice on deep pools will carry the weight of a man. Never were there such vicissitudes of temperature and climate.

In early spring the small patches of cultivation, rich brown soil or vivid green pasture, usually with a delicate setting of pink blossoms around their edges where the almond trees flourish, are seen hundreds of feet below, surrounded by the eternal almost white crags. Later in the season the more sheltered hillsides are a blaze of colour with crimson peonies which grow in great profusion amid the limestone.

The distant panoramic views from some of these sierras are magnificent beyond description. Even from the Hacho of Gaucin, the summit of the conical mountain above that town and only 3,280 ft. above the sea-level a superb view is obtainable on a clear day. From this point and from many others like it the various streams that join the Guadiaro can be seen sparkling as they wind through undulating hills far below, their courses marked by bright yellow sand-banks and by sinuous lanes of crimson oleander which fade away into the distance.

The Mediterranean and Straits of Gibraltar have the appearance of a great lake, the Rock rising near the hither shore like a small grey cone against a background of blue water. The great height and size of the opposite Pillar of Hercules, Ape's Hill, comes home when thus viewed at a distance from a height, also the vastness of the great tumbled mass of mountains which skirt the Straits towards Tangier and extend southward to Tetuan and beyond. Beyond Ceuta the distant outline of the Riff Coast can be discerned and far, far beyond this, the magnificent chain of blue mountains—the Atlas—capped with snow, which rear their heads above the heat mist shimmering over the intervening region, which, to this day, is a sealed book to Europeans.



$\frac{1}{5}$

EAGLE OWL.

Bubo ignavus (T. Forster).

CHAPTER IV.

THE EAGLE OWL (*Bubo ignavus*).

Retiring habits—Residents of Gibraltar in 1776—First acquaintance in wild state—Prolonged search for nest—Successful after nineteen years—An Eagle Owl's nest—An Owlet—Parental precaution—Favourite nesting-places—An Eagle Owl's crag—Disadvantages of climbing alone—Descend to the nest—An Eagle Owl's cavern—Manners and customs of young—A lower to a nest—Retriever as an assistant—Photographing Owlets in nest—Eagle Owls' larders—Hunting at sundown—Kept in confinement—Savage nature—Courage—Voracity—Deadly feud with Aberdeen Terrier—Eagle Owls' cries.

IT would perhaps be difficult to find any one of the larger raptorial birds so well-known to all bird-lovers and yet so seldom seen in the wild state—save indeed by the very few who may chance to penetrate into the remote districts it frequents—as the Eagle Owl. For unlike the Vultures, Eagles and Harriers which inhabit the same regions and which, owing either to their habit of soaring aloft or of beating a tract of country in quest of food, are often seen, the Eagle Owl delights in secluded valleys, beyond the bounds of which it seldom emerges by day.

But although so parochial in its habits by day, by night it goes further afield, as is amply proved by the remains of some of the birds commonly found in its larder, whose habitat is far removed from the districts where Eagle Owls nest.

Despite its retiring disposition and marked predilection thus to limit its sphere of action by day to certain well-defined localities, its appearance is familiar to many owing to the ease with which it is kept in confinement. In fact there are few large collections of living birds where it may not be seen, whilst its great size and striking appearance always attract attention to it, whether alive in an aviary or stuffed on the shelves of a museum.

Its nocturnal habit—though it is far from being entirely a night bird in the wilder regions it inhabits—causes its movements to be but seldom seen. Thus, I know of a pair which have nested on the Rock of Gibraltar for over thirty years and although I have listened to their strange calls by night many times, I have only once seen one of the birds on the wing by day during that period.

To those unversed in the ways of birds, and more especially those who do not know the extraordinary persistency with which certain species frequent the same localities year after year, it may come as a surprise to learn that in 1776 just one hundred years before I first met with the Eagle Owls at Gibraltar, the Rev. John White wrote to his brother, the famous Gilbert White of Selborne, to report their presence there.

In the quest of all wild birds' nests, although at times chance may favour the seeker, it not uncommonly happens that years pass before the most diligent search for a nest is rewarded by success. It was my case with the Eagle Owl.

So far back as May 1875, when wandering with Fergusson up the watercourse of a gorge in a Spanish sierra, a big bird flew out of the heather-grown crags about 300 ft. above us and passing overhead disappeared round the shoulder of the opposite hill. My

companion cried out "Eagle Owl over." Neither he nor I had ever in our lives seen one on the wing but the bird was unmistakable. It was naturally a surprise to both of us to see a bird which we supposed to be nocturnal flying high across country in the brilliant sunshine, but later experiences showed me that this species would seem to have even less dislike to flying by day than has our own Short-eared Owl.

Having seen the bird, the next point was how to find its nest. Here we were hopelessly at fault: year followed upon year, and although I repeatedly came across what I imagined to be old nests of Eagle Owls and unquestionably were places they habitually frequented, I was never rewarded by a sight of their eggs. In this I was not singular, for Colonel Irby has placed it on record in his "Ornithology of the Straits of Gibraltar" that, despite years of diligent search, he was never able to find their nests. Over and over again did I come across the old birds, generally sitting in some shady cavern in a sandstone crag, whence they would dash out on my approach. Once indeed I nearly succeeded in my quest in so far that I found a pair had taken possession of a cave which had previously been the nesting station of a Bonelli's Eagle. They had cleared out the Eagle's nest, sticks and all, and excavated a neat basin in the soft black earth forming the floor of the cavern. This depression was about 15 in. across and of the form and shape of a shallow circular dish. All around its edges was a neat frill of whitening bones of rabbits, rats and birds which had obviously once formed part of the "castings" or pellets of fur, feather and bone which all Owls and other raptorial birds reject the day following a meal. But the Eagle Owl never laid in the nest this year, possibly alarmed at my visit.

It was not until exactly nineteen years after my first sight of one on the wing that I was to be permitted to accomplish the task I had set before myself. In April 1894 I was once again in the

sierra I had visited in 1875, and I was scrambling along a steep hillside amid the deep cistus and high heath when an Eagle Owl skimmed past me carrying something and was quickly lost to view over a rocky hillside some hundreds of yards to my front. As the bird did not emerge from the valley it had entered, I reckoned it had most probably settled somewhere among the crags. So following it up I proceeded to examine several low cliffs near the summit of the hill which seemed to offer likely breeding stations. It was the identical spot where I had first seen the Eagle Owl on the wing so many years before. It was whilst forcing my way through some giant white heath, along a very steeply sloped terrace between some big rocks, that I had the good luck to flush the Eagle Owl almost to my feet. In a few moments I had found the nest! It was nothing more than a shallow basin in the soft earth at the roots of the heather and under the shade of a big rock. Save for the steepness of the hillside and the difficulty of forcing one's way through the heath it was so placed that literally anybody could have reached it. In the nest was a fine young Owlet in the early "down" stage, about a week old, also an addled egg. Around the nest were many pellets of fur and feather whilst a freshly killed water-vole, the lower portion of a rabbit, a young weasel and the remains of a Peewit lay close alongside the infant which was about 6 in. in length. The Peewit was of peculiar interest since these birds, although extremely abundant in southern Spain in the winter, nearly all depart northwards in March.

My subsequent education in Eagle Owls and their ways may be said to date from this moment. Ten days after this I revisited the nest and found the young bird still in the "down" stage although it had doubled in size and had blue quills 1 in. in length on its wings, whence the primary feathers were just emerging. A week later, judging that the Owlet would have emerged from the "down" sufficiently to ensure its survival in captivity (for, as

is well-known, nearly all raptorial birds succumb to cramp if taken when too young), I went again to see it. But the nest was empty! After a careful search all around I could only find a second empty nest almost exactly similar and similarly placed, less than 20 yards distant from the first, and likewise a third undoubted resort of Eagle Owls. It was quite clear that the old birds, resenting my intrusion in the first instance, had moved their young to a place of safety, and so it happily escaped me. I learned however from this experience that the popular ideas of Eagle Owls nesting in stupendous cliffs or inaccessible caverns was a myth. Since then I have come across and closely watched very many pairs of Eagle Owls and have found numerous nests, many of which I have visited and in hardly a single instance has a nest been in a cliff where a rope was a necessity in order to reach it. The birds, in fact, look for immunity to the vast extent of the wild country they inhabit and in the rough nature of the ground.

The favourite locality for a nest would seem to be on a shelf or terrace on the face of a crag some 10 to 50 ft. from the ground where genista heath or cistus grows in profusion and where, on the soft soil between the shrubs and the face of the cliff, the earthy nest is excavated sometimes 3 ins. in depth and the eggs laid. The eggs, usually two in number are pure white and of the size of a fowl's and nearly globular in shape. The picture is of a nest on a terrace amid some crags about 60 ft. high, easily reached from the top of the cliff and not more than 15 ft. from the ground.

The year following my first introduction to the young of the Eagle Owl I once again visited the cliff where I had found the empty Eagle Owl's nest, formerly tenanted by Bonelli's Eagle. This was in a small cavern situated about 20 ft. from the summit on the face of a crag 80 or 90 ft. in height. A picture of this crag is given in the chapter on Bonelli's Eagle on p. 334. A second showing the profile of the cliff will be found on p. 322 further on in

this chapter. Arrived at the top of the crag I dropped some stones over and shouted and eventually sallied an Eagle Owl. As

NEST OF EAGLE OWL ON TERRACE ON CLIFF.

owing to the time of year it was almost a certainty that the nest must contain eggs and as I still lacked a pair for my collection (having only the discoloured addled egg of the previous year),

I was extremely anxious to descend to this nest. To reach it with a rope was a very simple affair, a mere matter of being lowered some 20 ft. but I had no rope with me and further was all alone and, what was even more deterring, my whereabouts at the time were known to nobody. On the other hand, to postpone the descent and to return another day with ropes was impossible as I was leaving the district early the following morning. The climb was just awkward enough to make one want a companion, for owing to certain experiences I have the greatest dislike to the idea of running the risks of being disabled on some remote cliff. Many years previously when endeavouring to work along the face of a crag to reach a nest of the Blue Rock Thrush I had lost my footing and fallen, only a few feet it is true, certainly not more than ten, when I luckily brought up on a ledge, but the bruising and shaking I then got was so severe as to prevent me from attempting to move from that ledge for over an hour and the memory of such an untoward experience endures for all time. Further I had ever before me when working alone amid cliffs the already mentioned tale of the Bluejacket who attempted to go round the back of the Rock alone. It was decidedly a case for clear thinking, so I sat down and had it out with myself. I reflected how it was a reasonable certainty that this nest contained eggs and that for twenty years I had wanted some for my collection and here I was now within 20 ft. of them. As regards the risks run and the disadvantages of having no friend at hand, after a further reconnaissance over the edge of the cliff, always by the way a most deterring operation when a climber is of two minds, I came to the deliberate conclusion that: (1) the chances were even that I would *not* slip; (2) that if I *did* slip, the chances were a thousand to one that a companion would be of no use to me, nor I of any further use to a companion. So I took off my boots and all superfluous clothing and feeling cautiously for some hand-hold

dropped over the edge and after a few anxious moments, found myself safe and sound in the cave! Nor was I unrewarded for the risk I had run, for at the far end of the cavern was the Eagle Owl's nest exactly as I had seen it in the same spot fifteen years before with the difference that, this time in place of being empty, it contained two eggs! My happiness was complete! But I then remembered with horror that I had no means of carrying my prize in safety during the return climb, for I was in my shirt and knee-breeches only! I tried to put one big egg in my mouth and only succeeded in putting a tooth into it! Eventually with the precious eggs slung in my socks held in my teeth, I commenced the ascent. This, as usual when climbing on good sound rock, proved much easier than the descent and I was soon in a place of safety and thankful to find that the injured egg was only damaged on one side and would make a fair show in my egg cabinet.

This time I had not attempted to take my camera with me and wisely so, for it would have greatly impeded my climb and as events proved could not have been used since it was the one with the fixed focus of 7 ft.

The pen and ink sketch at the end of the chapter is from a water-colour drawing I made from this nest many years ago when it was occupied by a pair of Bonelli's Eagle. Small as is the cliff, it will be seen from the sketch what an extensive view both Eagles and Eagle Owls had over the surrounding country. That at the beginning of the chapter is from another water-colour sketch and shows the climber at the moment of reaching the level of the nest.

I however, revisited the same spot on several subsequent years and found the nest always occupied by the Eagle Owls, and having now a camera which I could use with effect at short distances, I was able to get photographs of the nest and eggs with the remains of a rabbit conveniently disposed in the larder hard by.

One year, it was in the spring of 1903, on descending to this nest I found it occupied by two most delightful Eagle Owlets. They were about half grown and a mass of fluffy down and finely vermiculated feathers. In vain did I try to photograph them.

NEST OF EAGLE OWL IN CAVERN ON FACE OF CLIFF.

Owing to the darkness of the cavern a considerable time exposure was necessary and it was simply impossible to get both to remain quiet. At times one of them would elect to resolve itself into a ball of apparently inanimate down for thirty seconds or so, but not so the other which would proceed to expand its plumage

until almost double its ordinary size and then slowly subside to its normal dimensions to the accompaniments of vollies of loud snaps of its beak. No sooner had one gone through this manœuvre and come to rest than the other would commence a similar performance.

I took these young savages and reared them successfully. From the very first they showed fight. When they were not

YOUNG EAGLE OWLS IN COURTYARD

more than a few weeks old I endeavoured to photograph them in the courtyard of the house where I was staying and the wrath and contempt they evinced at my efforts on this occasion are in some degree reproduced by the picture then taken. The séance was abruptly closed by one of them, not the supercilious one, suddenly making a vicious run at the camera.

As already mentioned, two eggs is the usual complement laid

but I have more than once heard of three young owls in a nest and have myself found a nest with three eggs. This was in 1905 and in the same nest as the owlets of two years before. I went down the cliff this time on a light rope and, despite the gloom of the cavern, got the photograph of the three eggs at 18 in. distance.

Having done the camera work I called out to Admiral Farquhar who had remained with the party who were handling the rope at

EGGS OF EAGLE OWL IN NEST AT END OF CAVERN.
(Size 2·3 in. by 1·9 in.)

the top of the cliff to come down and join me as I knew he was anxious to take some Eagle Owl's eggs himself. This he did, and I ascended. As I came over the cliff I was met by my retriever "Sweep" who was sitting with his paws over the edge, showing his teeth and apparently pleased to see his master safely back. I had, prior to descending, taken the usual precaution of making one end of the line fast to a rock, a very convenient

practice when possible, for several reasons. Chancing to look round as I was picking up my discarded gear, I was horrified to see that the rope upon which my friend was depending had been neatly *cut through* about a yard behind the point where two of the party who were doing the lowering work were grasping it. Of course a caution for them to hold on was all that was

PROFILE OF CRAG WITH CAVERN.
Nesting Place of Eagle Owl, and formerly of Bonelli's Eagle.

needed and no harm befell anyone, but the humour of the situation lay distinctly with the retriever, who tired of being "down-charged" alongside my clothes had whiled away his leisure by thus severing the line of communication between the rock above and his master below. Subsequently I worked round the flank of this little cliff and got a photograph of its profile,

on a very small scale it is true, but large enough to show one of the party descending to the cavern and those engaged in handling the rope at the summit. To some extent too it may graphically account for my dislike as described earlier in this chapter to going over this cliff without a rope or a friend to gather up the fragments.

In 1907 I visited yet another well-known and long-established nesting place of the Eagle Owl, which has been regularly occupied by these birds to my knowledge since 1869, and probably for decades or centuries before that date. My object was to get a photograph of the young in a situation where there would be enough light for a snap-shot, since experience had taught me that it was almost hopeless to get them to remain still for any time. As this nest is placed so that the morning sun shines into it, I felt sure that with good fortune I ought to succeed. The nest is on a shelf of rock in a crag about 50 ft. immediately above a pool of water and can be literally walked into by the most timid of climbers and in consequence is exposed to constant risk both of being harried and disturbed. On reaching it I found it empty but next moment I detected the two young Owls which had taken shelter from the heat of the sun's rays, in the midst of a bush of cytisus. They were fully fledged and had they been permitted to do so, could and would have flapped away and fallen into the water below. To prevent this, I got my companion to sit at the far end of the ledge whilst I herded the two youngsters back into their nest. This they submitted to under protest with many objurgations and violent snaps of their beaks together with savage grabs made with their sharp talons. Finally they resumed their position in the nest, one remaining quiescent for a time whilst the other flung itself backwards and struck out furiously as I brought the camera to bear at close range, in which eminently characteristic attitude it appears on the next page.

The larder is always an interesting feature with the Eagle Owl, and when there are young birds in a nest, it is sometimes large and varied. Five times have I found rabbits, usually with the head and upper portion of the body eaten ; thrice water-voles ; whilst in nearly every nest were remains of Peewits, Kestrels,

YOUNG EAGLE OWLS IN NEST.

Partridges and various small birds. The Peewits no doubt fall an easy prey to the great Owls, owing to their crepuscular habits. All who have waited for duck at flight-time know how irritating are the Peewits at that hour of the evening as with querulous cry and loudly humming wings—there is no other word to describe

the sound they produce as they "shy" at an intruder, which is like that of an electric fan—they cross the view of the expectant shooter and spoil many a fleeting chance of a shot at Wigeon. It was therefore with no small joy and gratification that one evening in March 1907 when crouching in a marsh after sundown for the Wigeon to drop in, and with the Peewits doing their best to annoy and disconcert me, that I beheld in the fading western light a glorious Eagle Owl skimming straight towards me. At the same instant a Peewit passed within a few feet of my face and next moment there was a rush of wings and a cry and a flutter and I knew my friend had replenished his larder up in the sierra and that the two hungry owlets in the heather would not go supperless that night.

As to the Eagle Owls preying upon the Kestrels, I have no ocular proof of how they manage it. But I know of several Owls' larders which are always full, year after year, of Kestrels' primary feathers and other remains. As Kestrels, especially when in colonies, are very much given to fluttering around their nesting stations and making a considerable disturbance about sundown, I imagine that the Owls take this opportunity to capture a certain number of them.

I have for over five years kept the couple of Eagle Owls whose portrait is given on p. 320 in an aviary where they have flourished exceedingly and consumed an almost incredible number of rats. Excessively savage as already described when first taken, they gradually became more amenable and would consent to take food from me and eat in my presence. My repeated prolonged absences, however, during the winter months in Spain have caused them to revert to their original uncouth habits, so much so that now it is no unusual thing for them to strike violently at me when I enter their dwelling. This is a good-sized cage built around an ivy tree and with a high pent thatched roof in the deep shadow of which is fixed

a barrel. Here when sated they sit side by side, indulging in pistol-like cracks of their beaks when interviewed. But they by no means avoid the light and are often to be seen of a fine day, sitting in the bright sunshine enjoying the warmth of its rays. After various minor engagements with them, during which I received a series of more or less painful stabs from the needle-like hinder talons with which they strike, I procured a fencing mask which to some extent prevents my being taken unawares when engaged in cleaning out or regulating their cage. The courage and pertinacity of these big birds is amazing. One day last summer one of them, after making a violent attack on me which was repulsed with a rake-handle, returned to the assault on eight successive occasions and eventually struck its claws well into my shoulder, after which it retired to its tub and fired volleys of "snaps" at me, evidently much pleased at its success. Despite such minor adventures, feeding Eagle Owls is ever a joy to me, for there is a quaintness and originality about their ways and movements which must be seen to be appreciated.

When food is brought them, they fly to a convenient point such as a log or perch and watch every movement of the feeder intently. Upon a rat or bird being thrown to them they spring up with marvellous agility and "field" it with unerring accuracy, with either left or right foot, even when bowled "wide," dropping back to their perch with their booty. Then if undisturbed, should the food be of reasonable dimensions, such as a half-grown rat, or a sparrow, it is gravely raised in the talons of one foot and held somewhat as a meditative smoker at times holds his cigar or pipe. Next moment it is seized in the beak head-foremost and swallowed whole. As it disappears the throat is expanded and the beautiful patch of white feathers on it, at other times hardly noticeable, becomes most conspicuous. A pause now generally ensues, all trace of the meal having departed save an inch or

two inches of rat's tail which hangs pensively down from one corner of the mouth, or, in the case of a sparrow, occasionally the extremity of the tail feathers. The production of more food at once causes a final gulp to be made and the first course finally disappears, the Owl getting ready for another catch. Three young rats or four or five sparrows seem to be thus stowed with but little effort.

The general appearance of the Eagle Owl is known to most people, but few save those who have seen them close at hand realize the marvellous size, brilliancy of colour and depth of their great yellow eyes, which combined with their so-called "ears," fine black tufts on either side of the head, give them a most horrific and impressive appearance. When alarmed or on the alert they compress their plumage and elongate their bodies making a picture of savage determination and strength either to fight or flee. To noises, especially those they are unaccustomed to, they are peculiarly sensitive. The rumbling of a cart or waterbarrow for a long time caused them great alarm, which they showed by dashing aimlessly around their cage. When irritated and angry they assume extraordinary attitudes; every feather on their bodies stands erect, nearly tripling their natural size, whilst their wings are raised on high and arched around so as to form a regular wreath of feathers, in the centre of which appears their heads with their huge yellow eyes flashing, their bodies swaying from side to side as they rest first on one feathered leg and then on the other, all the time giving vent to an appalling series of pistol-shot snaps. This is apparently their stock-in-trade for alarming any would-be attackers, and is certainly very effective with cats and many dogs, who are clearly at a loss to divine what class of enemy they have to encounter.

For my diminutive Aberdeen terrier "Garry" they have an intense dislike and with small wonder for, whenever he sees them sitting near the wire, he hurls himself at their cage barking furiously

and raging up and down in his attempts to get at them. They on their part are no less anxious to close with him and frequently strike vigorously at the wire in the hopes of damaging him. This warfare has gone on now for five years and both parties are absolutely convinced of their power to obtain a victory and no doubt also in the justice of their cause. Such is Garry's hatred of these birds that he has made repeated efforts when I enter their cage to slip in after me, but as he is equally anxious to have a personal explanation with my captive Bonelli's Eagle, I have no doubt his courage causes him to imagine himself capable in both cases of defeating them. The bitterness of the quarrel has been accentuated by my giving the big birds live rats to kill, a task he looks upon as one of his especial prerogatives.

When food of larger size, such as a rabbit or full-grown rat, is offered to them, they dash down and seize it and either fly off with it in their talons or, holding it in one foot, limp away on the other dragging it after them. Arrived at a convenient spot they tuck their prey under them and fluffing out the beautiful vermiculated feathers on and about their thighs until they assume the shape of a pair of big Zouave trousers completely hide their coming meal. On one occasion I threw in a couple of largish half-grown rabbits, which were promptly seized; one Owl, however, happened to take alarm and dropped its ration, upon which its comrade seized the two, and disposing them in a convenient heap, quickly expanded his (or her) trousers until both rabbits were completely concealed. The other bird now returned to retrieve its dropped rabbit, and it was a study to observe the anxiety with which it lurched around the cage on the vain quest whilst the other sat erect, puffed out but placid and immovable on top of both rabbits. It was not until the rake-handle had been vigorously applied that the wearer of the Zouave breeches consented to part with his comrade's rabbit.

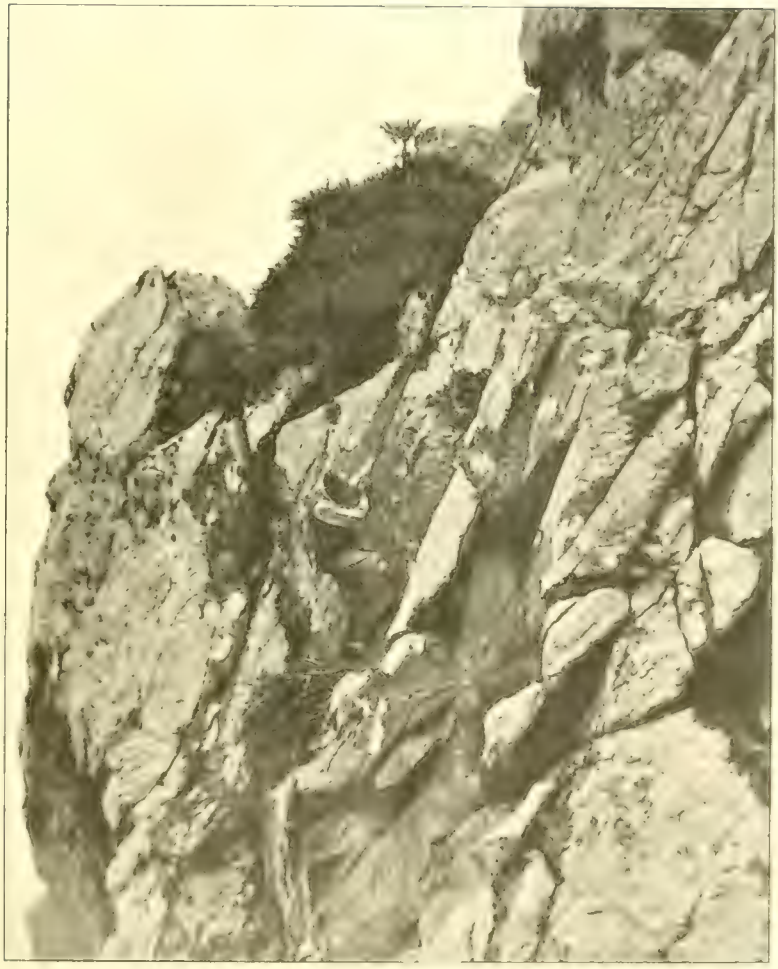
In captivity these birds are somewhat silent; after being fed they usually give a series of weird "boo-oos" of satisfaction; whence their Spanish name of *buho* (the aspirate being dropped in that language). They also have another cry somewhat resembling a Heron's, which I only hear them utter after night-fall. But in a wild state their cries are peculiarly fascinating and varied, and many a night in the hot summer evenings in Spain have I listened with delight as these grand birds uttered their wild, melancholy, hollow calls which echo and re-echo along the rugged cliffs and gorges in which they spend their joyful existence.

CHAPTER V.

BONELLI'S EAGLE (*Nisaëtus fasciatus*).

Used in falconry—Ancient residents at Gibraltar—My first Eagles' nest—Elaborate preparations—An amateur lowering party—Plumage of Bonellis, adult and young—Great size and power of legs and feet—Records of a Bonelli family—Number of eggs laid—Favourite food—An exchange of eggs, tame Goose's for Eagle's—A ridiculous episode—"Only a photographer"—Rape of the tame Goose's egg—A nasty cliff—A well-drilled lowering party—Admiral Farquhar descends—Perils of old limestone—A nest in 1908—An extemporized camera stand — Hanging the operator—Young Bonelli in nest—Bonelli's Eagle in captivity — Enormous power of feet—Savage nature—Splendid powers of flight.

THIS comparatively small Eagle appears to have escaped notice until about the year 1822. It is almost inexplicable how the bird should not have attracted attention earlier, for it is so thoroughly aquiline in its build, plumage and habits that it is impossible to confound it with the Buzzards and other lesser raptorial birds. It is essentially a rock-frequenting species and ranges over a considerable portion of the Old World, being found in places suited to its habits from Spain to Central Asia.



DESCENT TO NEST OF BONELLI'S EAGLE.

Like many other people whose education in birds had been limited to the so-called British list, I had never even heard of its existence until I first went to Spain in 1874. But I had not been many days at Gibraltar before I noticed a pair of Eagles which frequented and, I am happy to say, still frequent, the great cliffs on its eastern side, and thus made the acquaintance of a species which hitherto had been beyond my very limited scope of bird-knowledge. But in addition to the natural interest awakened by thus finding myself for the first time in my life in a position to watch and learn something of the habits of Eagles, as a falconer and the son of a falconer I was intensely attracted by Bonelli's Eagle when I learned that it was the same species which the Afghans employ for hawking small deer. For various reasons the larger Eagles have been found to be unsuited for falconry, but there was a report that in Central Asia there was a medium-sized Eagle which was more tractable and this was none other than Bonelli's. According to R. Thompson, Bonelli's Eagle will take young deer and full-grown hares; and Allan Hume who quotes this in his book adds "I have myself seen it."

The pair of Eagles which had nested at the back of the Rock from time immemorial (for with Eagles as with a well-established dynasty, there is no break or interlude in the line of autocrats of a definite area), until the advent of Bonelli, had rejoiced in the euphonious but ambiguous name of *aguila de las rocas*. To the alien English garrison they were likewise known as "Rock Eagles" a term which, as Colonel Irby truly remarks, was all-sufficient for those who would style a Buzzard a Bustard and *vice versâ*.

It may be readily imagined with what absorbing interest I set myself to watch these birds from a point of vantage at the top of the Rock. In those days the Signal Station was in charge of a Serjeant of the Royal Artillery who had, since he attained

that elevated position, taken a keen interest in the Eagles and their nesting and kept notes of them. With the aid of one of the powerful telescopes which formed part of his signalman's equipment I was enabled to watch the birds and thus receive my first lessons in the art of studying Eagles in their haunts. I also then first learned, from the Sergeant and Eagles combined, the mysteries of the alternative sites for nesting, adopted by raptorial birds.

This particular pair of Bonelli's Eagles has at least three, if not four, nesting sites on the face of the great precipice south of the Signal Station. One of these sites was in full view of the Signal Station Battery of those days. It happened that in the following February the Eagles selected this site for their nesting-place for 1875, and although I carefully reconnoitred it from both above and below, it was quite beyond my powers, at the time, to reach it. For to do so required a knowledge of cliff-work which I then lacked and further, not only an ample supply of ropes, but of assistants to work them which were, then, so far as I was concerned, unobtainable. There was moreover the ancient Garrison Order prohibiting the molestation of the wild birds on the Rock. I however argued to myself that there most assuredly must be other pairs of Bonelli's Eagle nesting in the mountainous country north of Gibraltar and, during the course of an extended expedition later on in the spring, I actually located two pairs. Both were nesting in very big cliffs, over 400 ft. high and in sites inaccessible without plenty of rope, which we did not possess.

In the following year when riding out from the Rock I saw a pair on the wing but so obsessed was I at this time with the popular belief that Eagles only nested in stupendous cliffs that I did not endeavour to track them. Again, a year later when out with the Calpe Hounds I saw one of these Eagles, not far

from the same crags where I had noted the pair during the preceding year.

Recognizing that there must obviously be some reason for this which was worthy of investigation, I took an early opportunity, unobserved, of leaving the hounds. For it is needless to explain that no British officer has any right to abandon the scientific pursuit of a fox in order to follow an Eagle!

I however was rewarded for my pains by seeing the bird, after sailing around high above some rocky ravines, eventually lower its flight and disappear into a gorge, where I knew there was a small cliff. I did not venture to follow up my observations on that day for the all-sufficing reason that the ravine in question was a favourite point for foxes to make for. To be found anywhere in the district would bring down upon me the charge of "heading the fox"! Since my own Colonel at this time was Master of the Calpe Hunt, this was, to say the least, undesirable.

Some days later I rode out with a brother subaltern, the present Sir Bartle Frere, and having picketed our horses, we made our way to the top of the suspect cliff. On reaching the edge, I cracked my hunting whip upon which a female Bonelli dashed out from a point almost exactly below where we stood. At last I had succeeded in my long-protracted quest. It was quite a small place, a nearly vertical crag less than 90 ft. in height standing above a steeply sloping hill-side, which gave it the appearance of being much higher. But to examine it a rope was necessary and we returned to the Rock to arrange details.

It was in truth an eventful day in my birdsnesting life when I set out, some days later, to attempt to get this nest. I had no experience of rope work on cliffs but like most people had read various accounts of its alleged perils. I accordingly made preparations which, in view of many years subsequent experiences of really dangerous cliffs, now cause me some amusement. For

my lowering party I secured no less than three recruits. One, my friend of the previous visit, a second being another Rifleman, Harry Fergusson, and the third, an officer from the garrison.

NESTING PLACE OF BONELLI'S EAGLE.
(*The nest is in the small cave, half-way between the figure on the sky-line and the cavern below.*)

Arrived at the crag, we once again sallied the Eagle from her nest, after which I was bound with ropes and lowered over. In order to guard against the entirely imaginary risk of a 2 in. rope cutting

or fraying during such a short descent a point was selected whence the rope got a clear run and as a result I went through the unnecessary discomfort of swinging clear of the cliff, for which there was no earthly reason. When about 25 ft. down I saw the cavern to my left which I eventually reached. As I came opposite to it, I saw to my intense joy a big nest of sticks and fresh green ilex boughs about 6 ft. from the entrance. Having secured my footing, I sang out for more rope and scrambled into the cavern. There, in front of me, lying in a basin-like depression amid the green ilex leaves, were two beautiful Bonelli's eggs! What my feelings were at this moment can only be justly appreciated by the unrepentant birdsnester. The cavern was but little more than a hole in the face of the crag, measuring about 5 ft. in height and some 4 ft. in breadth. The floor was of earth and sand and sloped upwards, the cavern getting much smaller at its far end.

The eggs were white, very faintly clouded with purplish blotches and with a few rufous markings, the largest measuring 2·75 in. by 2·05 in. Having examined my prize thoroughly, I returned to the top of the cliff to get my egg-boxes and other appliances. I was wildly excited at my good fortune, which naturally enough had driven all ideas of any danger of the climb out of my head. Also, the return journey had been so simple that I had forgotten the blundering descent. Not so my comrades however, who, one and all as inexperienced as myself in cliff work and none of them climbers, viewed my conduct as reckless and absurd. Unaware of this opinion and bursting with enthusiasm, I described briefly the glories I had seen and turning to the third member of my party said, "Now! I'll lower you down and you shall see an Eagle's nest for yourself." The man appealed to thus suffered from a severe impediment in his speech. Looking at me hard and with compressed lips, he ejaculated, evidently from

the very bottom of his heart, "No! I'm b-b-b-*blest* if you do!" Fergusson's reply was equally emphatic although somewhat more curt. Baffled in my efforts to share my joy with others, I again descended to the nest and since it was practically impossible to make much of a sketch of the interior of the cavern, I crept in as far as I could and made a water-colour drawing of what the Eagle saw when engaged in her duties of incubation. Indifferent as is this sketch it recalls every incident of that morning's work, now over thirty years ago. Below the cavern the cliff fell vertically for some 60 ft., to a slope covered with dense scrub, at the foot of which ran a stream in a sandy water-course. Across the valley lay a low range of hills at the time brilliant with yellow genista. Far beyond, the purple masses and jagged outline of the main sierra completed the picture. A small pen-and-ink copy of this sketch will be found at the end of the chapter on Eagle Owls.

Exactly eighteen years later, in 1895, I once again visited this cliff, this time in quest of Eagle Owls and with my small hand-camera photographed the same view that I had previously sketched. A subsequent comparison of sketch and photograph at any rate justified my care with my pencil and recalled to me the cruel criticism once passed on my artistic efforts, namely that at any rate my sketches were very *like* the places!

The general appearance of the adult Bonelli is dark brown above and very white below. Between the shoulders is a conspicuous white patch which makes it easy to identify the species at a considerable distance. The breast is streaked with dark brown but this does not prevent the general white appearance of the bird when viewed from below.

The young are entirely different, the throat, breast and underparts being of a warm rufous tint, and there is no white patch between the shoulders, at any rate for over a year as I can testify from having reared young Bonellis. The difference between

the two plumages is consequently most marked. In the second year the breast becomes lighter and large dark streaks appear. The iris also grows paler—a dull umber brown. The adult plumage is certainly not assumed until the third year but I have indisputable ocular proof that the birds sometimes pair and breed when still wearing the immature plumage, at any rate the females do so.

As regards their structure, few Eagles, if indeed any, are so powerful for their size as is Bonelli's. Their massive legs and feet and abnormally large claws are seemingly out of all proportion to the rest of their body. I have a foot of a female Bonelli which might easily be taken as belonging to a Golden Eagle, a bird nearly double the size and weight.

When they fly off the nest they make a rapid dive, quickly followed by a sharp upward curve which makes it no easy matter to shoot them. We had practical proof of this more than once in the case of a female belonging to the nest of 1877, much to the perplexity of those concerned, both excellent shots. Eventually the murder was perpetrated and I have her now stuffed in my collection. She has a very white breast, finely streaked with brown. All the males which I have watched enter or leave a nest have been similar in plumage, but not all the female birds, as already mentioned.

I am happy to be able to record that I have the life of only one Bonelli's Eagle on my conscience and this in spite of the many nests I have visited and the innumerable opportunities when I have had them within close range.

The next year the bereaved male found another mate and they nested in a low cliff, not 30 ft. high, on a shelf of rock less than 6 ft. from the summit, which it was possible to walk into. This nest was in the same ravine as the previous year but on the opposite side of it, the picture on p. 334 of the crag used in 1877 being in fact

photographed from the site occupied in 1878. Owing to the situation of this nest, which had an overhanging rock as well as a gnarled wild olive tree immediately above it, I was able more than once to approach unseen and to watch the female sitting on her eggs about 8 or 9 ft. from me. On such occasions she would soon detect my presence, turning her head round and glancing upwards before dashing off.

In 1879 this pair of Eagles moved to a third site in an adjacent valley about 500 yards from the first nest. This nest was placed on a ledge open to the sky only 15 ft. from the top of a crag and about 20 ft. from the base. The ledge sloped downwards and it was a marvel why the nest did not slide off. To reach it was simple enough, since it was possible to climb to the point where the ledge began, whence it was necessary to sidle along for some 8 or 10 ft. A sketch of this nest will be found at the end of the chapter on Cliff climbing on p. 90. There was no handhold and the ledge was smooth and slippery and without herbage, points which no doubt had been duly noted by the Eagles. Close below the nest was a cavern in which I secreted myself on several occasions in order to watch the old birds. Sometimes I was given notice of their approach by the shadow cast as one of them sailed round overhead and by cautiously peeping through a crevice I could see the Eagle as it alighted on the edge of the nest and walked in. It was an ideal spot whence to observe the movements and plumage of these beautiful birds.

Seven years later, in 1886, on my way out on a birdsnesting expedition to the Levant, I was at Gibraltar for a few days and rode out to my old haunts. I found the Eagles still in occupation of this site. Unfortunately they subsequently developed a taste for the fowls belonging to a goatherd who lived hard by and he in revenge climbed to the top of the crag and dropped stones on their eggs, a simple matter enough in the circumstances. In consequence,

they abandoned this site. It speaks for the solid construction of the nests of these Eagles that this same nest is still in existence. I have seen it from time to time during the last twenty years and only recently in 1908 had a look at it, when it was still intact but overgrown with green herbage.

The great majority of the nests of Bonelli's Eagle which I have visited have been placed on an open ledge very near the top of the cliff. So far as I have seen, this seems to be their favourite situation and it is the same whether the cliff is only 50 ft. high or 500 ft. In most cases there has been some stunted, wind-twisted tree, usually a wild olive, growing immediately above the nest affording a certain amount of shelter both from the weather and from observation. Two eggs is their full complement but it is by no means unusual to find a nest with only one. I have done so myself on five occasions, when there was no question of a possible second egg being laid. As a rule, the eggs are but little marked, some being almost white, but I have twice found single eggs, with fine rufous markings.

The favourite food of Bonelli's Eagle would seem to be rabbits, remains of which I have constantly found in their nests. They are also much addicted to Partridges and are in consequence known to the folk in the sierras as *perdicera* or the "Partridge hunter," to give a rough equivalent. As already mentioned, they have a great liking for the domestic fowl and owing to this and their alleged depredations on the very young kids they are much disliked by the peasants. As regards fowls, in nearly every instance where I have heard of so-called Golden Eagles taking them it has turned out to be Bonelli's Eagle who was to blame.

Within a few miles of where I pass the winter months in southern Spain there is a fine cliff about 200 feet high on which is a ledge that has served as a nesting-place for Bonelli's Eagles off and on for many years. Originally a Golden Eagles'

site, when these birds were forced to move elsewhere it was taken possession of by a pair of Bonelli's Eagles. In the years when they elected to occupy an alternative site some Ravens used it. In 1894 one of the old birds was shot and its mate forsook the locality. The following year some Griffon Vultures seized on the old nest. The big female with outspread wings now in the case of Vultures at the British Museum of Natural History was shot from off this nest. In 1905 I once again found myself near the place and from a distance saw a large dark-coloured Eagle leave the nest. It is a good example of the uncertainties attending bird-identification, a task so lightly assumed by many, that in spite of the fact that I have seen many Bonelli's Eagles as well as Golden I made the mistake of imagining the bird I had seen to be a Golden Eagle. I was alone at the time and the nest required ropes to reach it and some days elapsed before I was able to arrange for a party to assist me. The second time I visited the cliff, to my great surprise, in place of the dark Eagle I had seen before a white-breasted bird flew off the nest, without doubt a Bonelli's Eagle. It was evidently a case for investigation, so concealing myself in the scrub at the foot of the cliff I waited and watched. Before long an Eagle, evidently the female, from its size, returned and entered the nest. Very soon afterwards I saw a second Eagle flying straight towards me which with my glass I made out to be an adult Bonelli with white underparts. Onward it came and when it was less than 50 yards from the cliff its mate dashed off the nest and flew off in the direction the other had come from. The two birds passed one another like a flash, in mid-air, at a point less than 100 ft. above me and about 30 yards to my front. I thus had an unrivalled chance of comparing them and noted that the outgoing bird was the larger female in immature plumage, whereas the incoming bird was the smaller male in the white adult dress I have already described. I submit that it would be impossible

to obtain more conclusive evidence of these birds breeding before they have acquired the well-known adult plumage.

NEST OF BONELLI'S EAGLE.

The male went straight to the nest and took up the duty of incubation without a moment's delay, the female winging her way over to the hills to my front and disappearing from view. Having

got my party together we proceeded to the top of the cliff, whence it was but a short drop to the nest, easy enough with a rope. This nest was a big structure of sticks, probably the remains of the Golden Eagles' tenancy supplemented by the Ravens' improvements, and was lined with freshly cut branches from the palmetto bushes and some cork-tree boughs.

It contained but a single egg of the usual rounded shape of Eagle's eggs, well coloured with rufous markings at the larger end. For a moment I hesitated whether I should take the egg or leave it until a second was laid. Eventually, I decided to take it and replaced it with a tame goose's egg which I had with me in view of such emergencies.

I should mention here that it is a good plan always to carry a couple of fowl's eggs when on birdsnesting expeditions so that in the event of it being necessary to revisit a nest, they may be left in it in place of those abstracted, by which means the old bird may be induced to continue sitting. For such a purpose, I usually carry large fowl's eggs but on this occasion chanced to have a goose's, which had been laid by a tame goose which I used as a call-bird when driving Wild Geese during the winter months. It was somewhat larger than Bonelli's egg and of course of a totally different shape, since Geese, both wild and domesticated, lay somewhat elongated eggs pointed at both ends, whereas Eagles lay rounded eggs, with one end larger than the other.

Upon blowing the Eagle's egg I found it to be considerably incubated, a proof that there was no chance of a second egg being laid. It seemed rather unkind to the Eagles to leave them thus engaged in the fruitless task of endeavouring to hatch off a tame goose's egg, but as I did not blow the Eagle's until I had returned to our horses, some hundreds of feet below the nest, I was physically incapable of returning to it to remove the goose's egg.

It chanced that some weeks later I rode past the cliff with

some friends and we saw the white-breasted female leave it. We climbed to the summit and looked over. There, sure enough, only 15 ft. below us lay the pointed goose's egg, but, as I had clearly foreseen, no second Eagle's egg had been laid. We had no rope with us, else I should have descended and put an end to the deception.

As events turned out, this resulted in an unforeseen but supremely ludicrous episode. A few days after the last visit to Bonelli's crag, on our return from a long expedition one evening, I was informed that two Englishmen had arrived and had installed themselves in the kitchen of a cottage adjoining my own which I had temporarily hired since I had more people staying with me than my small house could hold. On enquiry I found them to be a professional bird photographer and his assistant out on tour in quest of "copy," who by some curious chance had come to stop at the identical spot where I have lived for so many years and which, it should be mentioned, is many hours from the nearest civilization. They assured me they were not collectors, in fact they did not take nests "only photographed them." During their stay they made various expeditions in the neighbourhood and then disappeared as suddenly as they had come, as also by the way did sundry Neophrons' and other eggs about the same time.

This occurred in the month of April. In the following March I was as usual staying in the same place and had forgotten all about the incident when one day I received a copy of *Country Life* sent me by one of the party who had lowered me to the Bonelli's nest the previous year and had seen me place the goose's egg in it. In this number, to my intense amusement, as well as to that of all who were concerned in the expedition, there was a most graphic account of the identical nest of Bonelli's Eagle we had robbed, describing how my photographing friend had obtained the egg from it! With the set purpose, apparently, to place on record

for all time his ignorance of Eagles and their eggs, the unfortunate writer went into the most minute details as to how the egg he had so gallantly obtained was "white and somewhat pointed at both ends"; in fact an unmistakable tame goose's egg! How painfully

EGG OF BONELLI'S EAGLE. (Size 2·7 in. × 2 in.)

unlike a Bonelli's egg is this veracious description can be seen by the accompanying photograph which I took of the real egg at about 18 in. distance when I was lowered to the nest.

Unfortunately, the goose-egger was by his own account not also a cliff-climber, nor was he equipped with a hand-camera or

other suitable apparatus for use in what was really a rather awkward situation for camera work. Thus it came about that *Country Life* lost a unique opportunity of a photograph of an "Eagle's" egg which, had it appeared, I should have hoped to obtain permission to reproduce here.

Some time after this episode, I met some *carboneros* (charcoal burners), old acquaintances of mine, who lived near the cliff and had seen me descend to the nest and photograph it. They had taken a keen interest in the transposition of the goose's for the Eagle's egg and had, from time to time, looked over the cliff to see if a gosling had hatched out. When therefore "a long Englishman," as they described the photographer, one day appeared on the scene and was at immense trouble to get the much-coveted egg "within his grasp" as he expressed it, they were enormously amused. The sense of humour which happily is so general among these poor fellows, who live cruelly hard lives with nothing to enliven them, found full scope in narrating the story. Nor do I escape altogether, for I am credited with risking my neck in order to put tame goose's eggs into Eagles' nests with the express purpose of fooling those who attempt to follow in my footsteps. The final verdict being that *El Coronel* was admittedly *loco*, mad, but that he at least knew what he wanted, whereas the luckless photographer was obviously *tonto*, imbecile, for he did not know what he was doing. I sometimes wonder in whose collection this most remarkable "prize" now finds a place!

It will be noted that most of the nesting-places of Bonelli's Eagle I have thus described at length were, comparatively speaking, very easy to reach. It is by no means always so, even in the most unfrequented and uninhabited districts. Thus, I know of a nest in the Serrania of Ronda close beneath a sloping terrace on the side of a very precipitous mountain. From this terrace there is a sheer

drop of several hundred feet to a great talus below. Above the terrace are a series of other precipices, whence have fallen masses of fractured limestone, fragments of which are perched on the terrace or wedged amid the rocks immediately above it.

On the day previous to visiting this spot we had seen a Bonelli's Eagle enter the cliff below some wild olive trees which grew close to the edge. From our position on the talus some 600 ft. below it was most difficult to be certain of the precise point. After a wide detour and a long scramble up steep slopes, round rocky bluffs and once right through a big fissure in a cliff, we gained a point above the terrace whence a sort of natural staircase led down to our cliff. Here we found a rope very useful as a life-line. We were now only 50 ft. from the olive trees at the edge of the cliff and it was absolutely necessary to be certain of the precise spot immediately above the nest before attempting to go over the cliff, for it was no place for experimental work. Fortunately I had with me a well-drilled party, so four of us proceeded as close to the edge as possible, separated from one another by 20 ft. intervals. We were thus in a position to mark with reasonable accuracy the exact spot the Eagle left when put off her nest. My own billet was in an olive tree which overhung the cliff and to reach it meant a cautious scramble down the sloping talus. To add to our discomfort it was blowing hard and the violent gusts of wind compelled me to hold on as if aloft at sea. Bad as was my situation, I feel sure that some of the others were worse.

When all was ready, some loose rocks were toppled over the edge, which with a pistol-shot caused the Eagle to dash out of the cliff. Thanks to our careful arrangements we were able to locate the point exactly and no time was lost in making the necessary preparations for lowering. The nest was designated for my companion, Admiral Farquhar, and I must confess to feeling some qualms as I saw him disappearing over the brow. Just at the

moment some furious rain-squalls were passing and the drifting clouds and vapour half-obscured the view of the rocky valley and winding stream which lay far away, 800 or more feet below us, and made the descent look doubly formidable. The lowering party were perched amid the rocks 30 ft. above me and I was in a life-line at the extreme edge, but such was the nature of the cliff that I could see nothing immediately below me and I remained crouched down, anxiously feeling the rope as it passed through my hands and waiting for the signal whistle from below. The wind whistled and roared around the edge of the cliff and it seemed impossible to hear anything. Very soon to my great relief, I heard the whistle, "Haul up," and soon we had our climber back safe among us.

One of those untoward affairs now occurred which illustrate the wide difference between rope-work among cliffs well-known to the climbers and the reverse. I called attention to this when discussing climbing in general in an earlier part of this book. My comrade having been hauled up to the lowering party, I was in the act of following him up, when a great mass of seemingly solid rock upon which I put my weight suddenly came away in my hand and bounding past me down the slope, disappeared over the cliff at the point where we had both been climbing and we heard it crashing and splintering as it struck the rocks hundreds of feet below. So much for working among disintegrated limestone rocks! Nor is it to be wondered at. The excessive rain-fall in this region during the winter months, the dense clouds which so constantly enshroud the mountain tops, the snow and hard frosts of every successive winter and the powerful rays of the Andalucian summer sun, all combine to break up the hardest formations. Some of the huge talus of sharply broken stone which are met with at comparatively low altitudes in this region bear eloquent testimony to the irresistible forces of Nature.

In the case in point I was luckily still in my bowline or certainly would not be writing this, but such incidents are most disquieting and do not add to one's sense of security. I mentally vowed to be more careful in future. Oddly enough, others did the same, for two years later when engaged on this book I chanced to ask Admiral Farquhar what, in his opinion, was the nastiest place he had ever been in when eagle-nesting. He at once replied "That Bonelli's nest we took together," adding that, had he not been so desperately anxious to take a Bonelli's egg with his own hands, he would not have gone over the cliff on that day. Curiously enough, neither he nor I had ever discussed the affair in the intervening time, possibly the most eloquent proof that we did not altogether enjoy ourselves. But most assuredly it requires a man to be possessed of the true birdsnesting spirit, the spirit that discounts all dangers where a nest *must* be got, to induce him to go over a cliff as did my old comrade on this occasion. However *he got the egg!*

I revisited this district but not this same nesting-place in the spring of 1908, as I was anxious to get a photograph of a Bonelli's nest with two eggs in it. The nest I selected for my attempt was only about 30 ft. from the summit of an overhanging cliff and was placed on a very small ledge beyond which the big nest protruded considerably. Below the nest the cliff inclined inwards so that it was a clear drop to the ground far away below. There was no foothold or support amid the rocks anywhere near the nest, and as soon as I was lowered to it I realized that I had my work cut out for me. Fortunately, just above the nest a very sturdy old olive tree was growing out of a cleft in the rocks, the nest depending for its support upon some of the lower branches of a second tree which curving downwards served to retain it in its somewhat precarious position on the shelving ledge. A friendly branch of the first olive tree extended above the nest and but 5 ft. from it, and I saw that if

only I could use this branch as a "stand," I might be able to hold the camera on it steady enough to get a 30-second exposure. I found however that I needed both hands to keep me from swinging off the bough and even then my weight caused it to bend slightly, quite enough anyway to spoil a photograph. To depend on the rope alone as my support was out of the question, for there is a lot of vibration in 30 ft. of $1\frac{1}{2}$ in. rope.

Looking around, I espied only a couple of feet overhead a still stouter bough and realized that herein lay my opportunity. So, carefully overhauling the end of my rope, I made it fast to this branch so that I remained suspended just below it by the small of my back. By good luck I was now able to jamb one foot into a cranny and thus to steady myself completely. I now laid the camera on the lower bough in front of me and found to my joy that it was to all intents and purposes steady.

Determined not to lose such an opportunity, I took a series of photographs with both cameras. One set, alas! owing to the same defective films which had served me so cruelly in the case of a Bearded Vulture's nest only the day before were spoilt. Of the others in three cases the camera slipped and in some the olive branches vibrated in the wind. Owing to my constrained position and the fact that the eggs were below me I could not look into the finder when photographing and hence lost one or two exposures owing to the eggs being on the edge of the film. Curious to say, my greatest trouble was to find a spot where I could deposit my watch in order to time the exposures. Eventually I managed to suspend it to a twig. I made a vow there and then never again to attempt photography in awkward places unless provided with a wrist watch. It all sounds very trivial, but there are assuredly troubles enough for the unfortunate climber endeavouring at one and the same time to retain his balance and to manipulate a folding-camera without any such extra annoyances.

I confess to feeling a sort of sardonic pleasure when in this "precarious and not at all permanent" position, in the words

NEST OF BONELLI'S EAGLE.

(*Taken with the Camera resting on a bough 5 ft. from the eggs, the photographer being suspended from a branch just above.*)

of Mr. Chucks, at the thought how utterly subversive of all orthodox photography, with its accompanying rigid tripods and

stands, was my weather-worn olive tree and the light rope wherewith I was lashed thereto.

Nestling Bonelli's Eagles go through the same phases of change of plumage as do other eagles; from their earliest days the great

YOUNG BONELLI'S EAGLE IN NEST SHOWING FIGHT.

size and power of their feet to which I have already called attention are very noticeable. In 1907 I was lowered into a nest containing one young bird, fully fledged. As I landed in the

nest, it threw itself into a splendid attitude of defiance and defence as if challenging me to come on.

I had some trouble in photographing this young savage, as when the camera was brought near it, it struck out furiously with its talons and it was wonderful to see what a reach it possessed when it had a mind to inflict an injury. Curiously enough, by its side was the body of a freshly-killed cock Blackbird, plucked almost completely clean of feathers, the bright yellow bill and a few small feathers around the base of it alone serving to indicate what it was. A blackbird would appear to be a very small quarry for such a fine and powerful bird as Bonelli to capture. But the reason was simple enough ; the hillsides, immediately below the nest and for miles around are densely overgrown with lentiscus, with stunted cork and olive trees scattered at intervals, amid which blackbirds are abundant. No doubt as the Eagles skim over the undulating ground in quest of rabbits or Partridges, innumerable opportunities occur for grabbing a thoughtless Blackbird, which, after the manner of their kind, fly chattering from one clump to another.

Having decided to take the young Eagle, I attempted to pick it up, but it threw itself on its back and was so pugnacious that I forwent the pleasure of its company during my ascent. Having left it to recover its feet, by means of a few feints, I induced it to back towards the edge of the nest, when a push with my foot sent it over into space and it descended with extended wings, parachute fashion, dropping into a big cistus bush a hundred feet below, whence I subsequently retrieved it. This is the bird I have alive at my home in England and a very interesting one it is to study. Its favourite food is rabbits or rats, but judging from its fierce demeanour when cats come near its aviary, I imagine they would have a bad time of it, if they ventured within its grasp. Grasp is indeed the word, for of all the raptorial birds

I have, from time to time, trained to sit on my fist, none has shown anything like the power of Bonelli, both to strike violently and having struck, to maintain an unyielding clutch of the object held for an indefinite time. The thickest buck-skin falconer's glove is of little protection when this Eagle is aggressively inclined. I would much like to enter it to fly at hares, rabbits and Partridges and feel well-assured I could succeed in training it in a very few weeks, but the certainty that in England it would be shot on the very first occasion it got away from me prevents my doing so. A trait in its character, which argues well for its tractability, is its absence of sulking. Most Eagles possess this defect to a marked degree, some almost incurably so. When it was six months old, I took it in hand and although at first it gave splendid exhibitions of sulks—splendid so far as appearance went, as with drooping wings and every feather expanded and lowered head it endeavoured to shut itself off from me and my importunities; but it realized quickly the inutility of such conduct. In a very short time it would not only sit on my fist but fly to it for food. To a falconer it is easy to see that this fine species is eminently adapted, by structure, habits and temperament for the successful prosecution of the noble art. Now, after eighteen months it will fly to my fist fearlessly. But it resents fiercely any interference with its food and will make a furious dash at me if in any way annoyed. Hence, as a precautionary measure, as with the Eagle Owls, I usually wear a fencing mask when at work in the cage.

As may be easily imagined, the flight of Bonelli's Eagle is as buoyant and quick as it is powerful. I have watched them for many years on numerous occasions circling high above some cliff where they were nesting or hunting over some suitable tract of country, and the ease and grace of their movements at such times are suggestive of the flight of a Falcon. At times they

will ascend to a great height and remain apparently motionless, literally hanging in the air. In their attack and swoop they are lightning-like. I can recall how in the winter of 1902 I was shooting Partridges on an alluvial plain near the town of El Kasr El Kebir in Morocco. Some birds rose rather wild and I sent away one hard-hit. I had hardly shouted to my companion "Mark that bird" when a Bonelli's Eagle appeared on the scene with a tremendous swoop and clutching the wounded Partridge, without an instant's check in its speed, swept with it onwards and upwards and vanished out of sight. It was an interesting spectacle for any student of bird-life and one of peculiar fascination to a falconer.

GOLDEN EAGLE.

Aquila chrysaëtus (Linn.).

CHAPTER VI.

THE GOLDEN EAGLE (*Aquila chrysaëtus*).

Popular ideas of Golden Eagles—Absurd misrepresentations—Preference for limestone country—Repugnance to Griffon Vultures—Alternative nesting sites—Locating nests—The interest of personal observations—The use of paid assistants—A Spanish argument—Partiality to cliffs—But not necessarily big ones—Remote spots their chief safeguard—My first Golden Eagle's nest—An easy descent—A useless camera—A seven years record—An interesting descent and successful photograph—Other descents and photographs—Behaviour of Griffons—The task of locating Golden Eagles' nests—Necessity for careful observation—Results of skilful reconnaissance—A joyful sight for a naturalist—Watching Golden Eagles in their haunts—A glorious spectacle.

THE glamour about the name Eagle, especially Golden Eagle, makes it hard for an ornithologist to avoid offending readers who probably have exaggerated ideas as to Eagles' size, valour, ferocity and general habits. From the earliest days classic writers have idealized the bird and attributed to it so many marvellous qualities that a mere narration of a field-naturalist's everyday experiences among these splendid birds fall far short of the symbolic bird immemorially selected by warlike nations as the insignia for their standards.

Thus the "king of birds," which we have every reason to believe is one of those which pair for life and which is usually seen hunting in company with its mate, (save indeed in the nesting season or on occasions when a single bird may go in quest of food), has been portrayed as combining in large parties to attack less powerful birds. Landseer's famous picture of "Eagles attacking Swans" is a monumental work of mischievous misrepresentation, since it not only represents an impossible gathering of Eagles but attributes to them methods of attack which no Eagle ever adopted, since Eagles strike or pounce on their quarry and do not engage in vulgar brawls either by land or on the water.

Of less importance, but even more gratuitously misleading, are sundry modern journalistic efforts to present the Eagle as a sort of gryphon. I have in my mind's eye a picture of "Attacked by Eagles" in which a man is depicted surrounded by a bevy of gigantic birds as large as ostriches with a span of wing of 12 feet or more. The veracious account lays the scene in a cocknified health resort in southern France, where Eagles are almost as rare as they are at Brighton.

The Golden Eagles who are my friends, (save indeed on the rare occasions when I take eggs from their nests) are quite another bird, averaging about 10 to 12 lbs. in weight and with a span of wing of rather over 6 feet. Those who see my sketches and photographs of the various homes of the Golden Eagle I have from time to time visited ask me "What do you do when you are attacked?" Please note the formula:—It is not, Do they ever attack you? Here again I must plead to being equally unfortunate, for not only do my Golden Eagles never hunt in bands like wolves or adopt casual babies, but despite the scores of times I have descended by means of ropes or escaladed big cliffs in quest of Eagles' nests, I have never had the honour of being attacked by the infuriated parents.

I may mention here that although I have climbed to so many nests I have never yet pulled a trigger at a Golden Eagle. Naturally enough I have had them close to me any number of times.

In southern Spain they are curiously local, so much so that writing in 1874 Colonel Irby said that he had never seen one. Some years later I found them nesting sparsely in the great sandstone cliffs of western Andalucia and showed Colonel Irby two sites, but it was not until I pushed my expeditions into the limestone mountains which form the western and southern spurs of the Sierra Nevada that I made close acquaintance with them. On two occasions only have I seen them in Morocco and I know of a nest on that side of the Straits.

It is difficult to account for the marked preference of the Golden Eagle for the limestone country beyond the fact that they seem to have a supreme dislike for Griffon Vultures and, so far as my personal observations go, never tolerate them near their nests. Since all the larger cliffs in the sandstone country are tenanted by Griffons, this may be one of the reasons. Again, owing to the normal geological formations of the limestone country, there are usually fewer caverns and fissures in any one cliff than amid the sandstone, and hence the Griffons nesting there are, as a rule, more generally distributed since they have not the local facilities for living in big colonies which exist in some of the sandstone crags. For although Golden Eagles most undoubtedly do drive away any odd pairs of Griffons which may attempt to occupy their own particular cliff, I do not think they would attempt to oust a whole colony. There is however yet another possible reason for the Golden Eagles restricting themselves mainly to the limestone country. The nearly allied species, the White-shouldered Eagle, which frequents the wooded hillsides and valleys of the lower sandstone country, as also do two other tree-nesting Eagles, are

incessantly on the look out for food and their persistent harrying of these districts may possibly not leave sufficient game to make it worth while for the Golden Eagles to establish hunting quarters in the same region. Rabbits and Partridges are Golden Eagles' favourite food and in the sierra the only serious competitors they meet with for this class of prey is the smaller Bonelli's Eagle and, to a less extent, Eagle Owls, who also dearly love a rabbit.

The Golden Eagles are very partial to young kids and very small lambs and at the period of the year when these are about the herdsmen keep a sharp eye on the movements of the Eagles. When, as occasionally happens, a nest is on an open ledge visible from the top of a cliff, the goat-herds not seldom drop pieces of rock into them so as to smash the eggs and drive the Eagles to some other locality. In this case the Eagles do not entirely leave the district but resort to another site not far off.

This brings me to a very interesting trait in the habits of the Golden Eagle, well known to most field naturalists, found in many other Eagles and raptorial birds, but in none so marked as in Golden Eagles.

Every pair of Eagles, whose habits I have had an opportunity of watching over a period of a few years, would seem to have usually at least two alternative sites for their nests, some have three and I know of one with four sites. In fact I only know of one pair out of many, which habitually resort to one place and one only. The reason for this is however apparent for owing to its situation it has never been disturbed. This nest is in a small cavern on the face of an absolute wall of limestone rock some 800 ft. high, at about 400 feet from the summit. Above the cliff is a talus of loose stone at an angle of 45° or so, above which again rise other precipices. To reach the nearest point above this nest would be a long day's work and to lower a man to the nest would require at least 500 ft. of 2-inch rope and an equal amount of lighter stuff would be most desirable as a life-line.

A most interesting and fascinating occupation, to my mind, is the locating of the nest of all big birds and especially the nest of the Golden Eagle. I am quite aware that in many instances it saves time, trouble and expense to hire local men to mark down the nests of these and other birds, and on emergencies, when time has pressed, I have not scorned to avail myself of such local knowledge, but always on the explicit understanding that nobody save myself was to approach the nest or touch the eggs or young.

But when all is said and done, some of the happiest days of my life have been those when, possibly after days, weeks or months and in some instances, years of observation, I have without assistance succeeded in solving the riddle of the wild birds. There is something to me particularly enthralling in having observed an Eagle in a certain district flying on a certain line, or hunting a certain hillside and by degrees, perhaps after repeated failures and fruitless expeditions, along totally distinct watersheds amid high mountains separated by valleys a day's journey across, reducing the suspected region to one of a few square miles, then, to a single ravine and lastly, to a solitary crag in the same.

Again, the employment of local talent by no means always ensures success. More than once have I been taken to be shown a reputed nest of an *Aguila real* which has turned out to be nothing more exciting than that of an Egyptian Vulture or of a Kestrel and in one case even of a Rock Dove! The Rock Dove episode, although vexatious, was amusing, as showing the vein of thought of the Spanish herd who conducted me and who, after cross-questioning me as to the reasons why I wanted to get such useless articles as Eagles' eggs, evidently came to the conclusion that I was a harmless lunatic. I was naturally furious at being let in for a nasty climb up a cliff to a cavern to interview a pigeon and explained my feelings with some decision. He only rejoined:—"You said you wanted to climb a cliff and get a nest

with two white eggs which were of no use to anybody, there you have the eggs, take your gun and shoot the birds, they are capital food, worth more than a —— Eagle."

But that was many many years ago and before I had learned the lesson, never to be induced to climb to a nest unless I had previously seen the birds and, from watching their movements, had made myself acquainted with their secrets. I dedicate this simple Spanish tale to these "naturalists" who fondly imagine that by paying natives to find them nests and bring them eggs they have mastered the whole art of birdsnesting.

In Spain the Golden Eagle is essentially a rock-nesting bird. Out of a large number of nests I have visited I have never yet come across one in a tree, whereas in Scotland a certain number of the few Eagles which still survive habitually select trees for their nests.

Doubtless one of the reasons why Eagles usually resort to places difficult of access is found in the centuries of persecution they have undergone from mankind, typified in resentful goatherds or peasants whose flocks or poultry have suffered from Eagles' depredations. But nothing could be wider of the mark than the popular belief that these grand birds invariably nest in the loftiest and most inaccessible cliffs. On the contrary they seem, as a rule, infinitely to prefer some quiet valley where passers-by are few and far between, and where some small crag presents a peculiar difficulty to the would-be climber, to a bold precipice, visible from afar, known to all the countryside and popularly supposed to be unclimbable. Of course, some Eagle's nests are placed in stupendous cliffs, but, as a rule, provided an adequate supply of ropes can be taken to such a spot, they are much easier and safer to descend than are far smaller crags, possibly only 50 to 100 ft. high, which by reason either of steep and crumbling slopes above or of overhanging rocks are both difficult and dangerous.

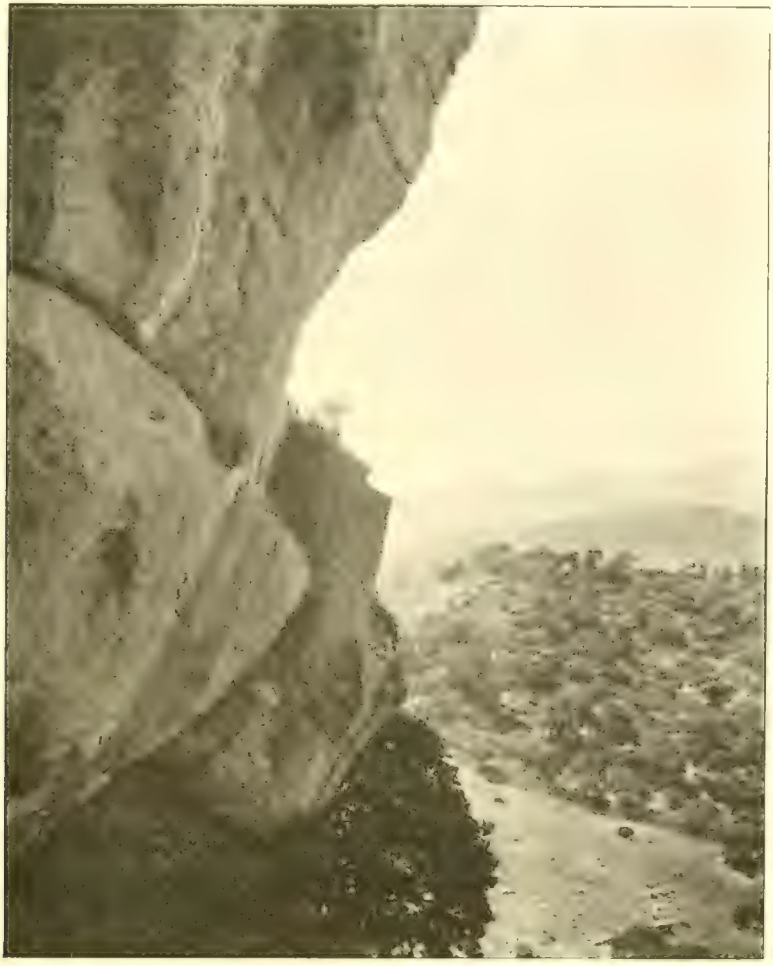
I refrain from the word impossible, and for the good reason that, given sufficient ropes and, above all, skill in their use, and always provided that the topographical conditions admit of the requisite gear being transported to the spot, there are very few nests which can be pronounced impossible to reach. Such, at least, are my experiences. Whether successive generations of Eagles have learned by bitter experience the fallacy of trusting to height and to height alone as a safeguard for their nests, it is impossible to say, but every year I live and every fresh nesting place I visit confirms me in the belief that in the selection of sites for their nests wild birds are above all else concerned to escape observation.

The first time I ever had the joy and gratification to see a Golden Eagle's nest containing eggs came to me with but little effort. I was exploring a big limestone hill of the type so frequently seen amid the lower spurs of the Sierra Nevada and sighted a pair of Golden Eagles high overhead, which shortly disappeared round the shoulder of the mountain. Following them up, we came upon a big range of cliffs about 400 ft. in height which ran parallel to a steep watercourse.

Above this range was an extensive rocky terrace with a second series of cliffs above, surmounted by yet another terrace and a mass of pinnacle crags. After a time we saw one of the Eagles enter the lower range of cliffs, but from our position it was impossible to be certain of the exact spot. As it was late in the day we returned to our house, and the following morning resumed our search. Commencing operations on the top of the cliff which we reckoned most probably contained the Eagle's nest, more by good luck than by good management I hit off the spot from above, for, on firing a shot, a Golden Eagle dashed out of the cliff almost exactly below the place where I stood. The cliff was perfectly sound limestone, much weathered, and quite

vertical, a small fissure a few feet deep ran down from the summit hard by where I was, and it was not difficult to guess that the nest was probably placed in this, at some point below, where there was a ledge. I had with me just 50 ft. of 2-inch rope and with this I was lowered some 35 ft., enough to see that not far below me there was a projection which overhung the face of the cliff lower down. Fortunately, we had also with us 180 ft. of 1½-inch Alpine rope and so, ascending, I doubled this and making a bowline-on-a-bight went down again. When about 50 ft. down, I passed on one side of the projection and sighted the nest immediately below it, placed in a small recess, a continuation of the fissure above. Ten feet lower, I got some good handhold which enabled me to work my way upwards from below the projection and reach the nest, which contained two splendidly-coloured eggs. The nest measured about 3 ft. across and was lined with fresh ilex and palmetto leaves. I had with me my small fixed focus camera (it was in the early days of hand-camera work) which could be used, at a pinch, at 7 ft. But here I was, only 3 ft. from the nest, which lay in dark shadow. I steadied myself by pressing my feet against the cliff and straightening my knees but it was no good, for by no possibility could I obtain the necessary focusing distance and, further, a time-exposure was out of the question, owing to the absence of any possible means to improvise a stand on which to rest the camera, and all the time there was the vibration of the rope. Of course I took a "snap" and equally of course it was a failure. I have the picture still, such as it is, with ghostly ill-focused rocks and its interest is that it records the absolutely sheer nature of the cliff and shows the flutings of water action on the portion of the rock behind the nest. Having hauled myself into the nest, I packed my eggs and re-ascended. During this time, the old birds, as usual, lay off at a distance, rarely coming into view. This nest was in one of

three alternative sites, all on the face of the same big cliff. The second site was in a very similar position some 200 yards east



VIEW FROM A GOLDEN EAGLE'S NEST.

of the first, whereas the third was on a buttress or big terrace, a few hundred yards to the west of it. I have re-visited this cliff several times since and have found the birds sometimes

occupying one of these sites and at others a fourth site, which I failed to discover, owing to lack of time.

Another pair of Golden Eagles occupied a big hill about a day's journey from the nest I have just mentioned. I have had an opportunity to study this pair closely for over seven years and have succeeded in finding the various alternative sites they have occupied. The first site, which I will call "A," was on a small terrace about 250 ft. from the base of a very precipitous cliff, and perhaps 150 ft. from the top. The view from this nest which is situated many hundreds of feet above the general level of the country below it is very extensive. But, although to the eye the place is most inaccessible, as a matter of fact it can be approached from behind through a small natural embrasure in the rocks which leads right into it. It has for many years been resorted to by Golden Eagles, and although the local goatherds have, as they have told me, often destroyed it, and of late years it has been harried more than once, the hapless old birds still resort to it at intervals.

Two eggs were taken from this nest, not by me, the first year I heard of it. The following year the Eagles nested in a low crag in a small ravine about three miles north of the first nest, which I shall call site "B." Here they happily escaped molestation.

The third year, the old birds removed to a low cliff in a ravine about two and a half miles distant east of "A" and three miles from "B," which I shall call site "C." This nest was on a shelving rock, not 15 ft. from the summit, the ground above was however extremely steep and the soil loose and it was necessary for those who handled the rope to exercise great care before they could obtain a safe foothold amid the steep and slippery rocks. A big rock overhung the nest and made it quite inaccessible from directly above. I accordingly went over to the right of it, but found it impossible to work into it from the flank. Finally I went over, some yards to

the left, and striking a joint in the rock running at an angle of 45 or so slipped along it with my weight on the rope, keeping myself

NEST AND EGGS OF GOLDEN EAGLE.

in to the face of the cliff by handhold. By this means it was easy to get to the nest, always keeping a strain on the rope, an essential proviso owing to the absence of any safe foothold. On this occasion

I was equipped with a more suitable camera, the Kodak arranged to focus down from the normal 6 ft. to 18 in. A withered cork tree grew hard by the nest and, by hanging my watch on a twig in front of me and pressing the camera against the face of the cliff, I was luckily able to take several time-exposures of thirty to forty seconds which gave good results. I subsequently revisited site "A" of the previous year and found it to be in the possession of a Griffon Vulture which had relined the old Eagle's nest with tufts of grass and bents, and had laid its single white egg in it.

In the fourth year neither Eagle nor Vulture occupied site "A," although the cliff was held by several pairs of Griffons. The Eagles this year had returned once again to site "B." This was quite the smallest place I ever saw tenanted by Golden Eagles and was almost identical with that at "C," with a steep slope above and was further actually approachable to within 12 ft. or so from below, along a narrow shelf. Beyond this further progress was impossible and the nest had eventually to be reached from above.

The fifth year the Eagles returned to site "C," and laid one egg which was unfortunately taken; the female then proceeded to site "A," and laid a second egg, but this nest being easily reached was so disturbed that they forsook it. Unluckily they were weak enough to return once again to the same site "A" in the sixth year, and access being easy the eggs were eventually taken. The seventh year they returned to site "C," and laid two eggs. Besides these three sites thus used in rotation as described, I came across a fourth site, where I was told they had at times nested in former years, but, beyond seeing the Eagles around this crag, I have no proof that they did.

This habit of Golden Eagles to select a shelf of rock in comparatively low cliffs is a very curious one. I found the nest of a third pair in almost exactly a similar situation to those already described as "B" and "C," a day's march south of them.

A sketch of this nest appears at the beginning of this chapter. In this case the nest was only a few feet below the crest, the

NEST AND EGG OF GOLDEN EAGLE (site "B").

crag itself being about 100 ft. in height, whilst access to the edge of the cliff was across a dangerous loose talus of débris fallen from the immense cliffs above.

The moral pressure exercised by Golden Eagles over their despised connections, the huge Griffon Vultures, was very apparent in the case of the nest at site "A." The first year, when the Eagles were in occupation, no Griffons were to be seen about the place, the second year I noticed a pair, the third year one had actually taken possession of the disused Eagle's nest and another pair had established themselves in a big cavern close by, the fifth year there were four or five nests. The sixth year I first detected the presence of the Eagles by seeing one suddenly descend from the zenith and buffet a Griffon that came sailing past the great cliff where the Eagle's nest was situated and which made off with great precipitation. As a matter of curiosity I fired subsequently several shots to see if any Griffons were nesting about the cliffs, but none came out. To make sure, I then climbed up and visited the various nests I knew of and found all alike untenanted and out of repair. A single pair of Neophrons were nesting in the big cavern which formerly held several Griffons' nests and the female had laid her eggs in one of the Griffons' nests of the year before. It would be difficult to produce clearer testimony of the antipathy of Golden Eagles to Griffon Vultures.

Possibly some who read this may imagine that it is a simple matter enough to find the nests of these beautiful birds. Of course, with good luck many things in life are made easy, but in few pursuits that I know of are there more chances of disappointment than in tracking Eagles' nests.

When once a pair of birds are located and their nesting places discovered, it appears to be absurdly simple, and so it may be for the casual visitor who wants to be shown an Eagle's nest, and who can by this means get a man to take him straight to the spot. But for the genuine bird watcher, how immense and uncertain is the task and how overwhelming at times are the

NEST AND EGGS OF GOLDEN EAGLE.

unexpected difficulties which present themselves, one after the other, as if to debar him from accomplishing his object!

The mere fact of watching Eagles enter cliffs, either singly or in pairs, is a long way from ultimate success in finding their nests. Owing to their habit of resorting to alternative sites, it not unfrequently happens that a pair which may be meditating nesting play around various old nests with aggravating uncertainty. Even after they have come to a decision to repair and re-line one of the nests of former years, they have a way of resorting to some of the other sites and flying in and out of them in a most deceptive manner.

The tyro after seeing the birds thus enter a nest is ever anxious to go to it at once. Such haste is, as a rule, prolific of disappointment. But even when a nest has been undoubtedly fixed and the fact that it contains eggs has been reasonably assured, the final successful approach to it from above is by no means a matter of course. Often it is the work of a whole day to attain the top of the cliff above the Eagle's eyrie and only those who have frequently gone through this seemingly simple operation and have experienced the repeated failures which so often attend it can appreciate the vast difference between seeing a nest from below a cliff and trying to place oneself exactly above it, possibly many hours later on. As often as not, the configuration of the crestline prevents a near approach to the edge and it may be necessary to make several tentative descents in a bowline to peer over and endeavour to fix the desired spot; and how very unpleasant this process is at times! and how much worse it seems to become, the more you look at it!

But in such a case, as in all wild sport and adventure, the very difficulties add zest to the enterprize and what unspeakable joy it is to the unrepentent birdsnester when after a series of awkward adventures he finds himself at last right in to the coveted nest! And to the naturalist how intensely fascinating is such a moment,

as he looks at the great structure of sticks, perhaps 4 or even 6 ft. across, with its lining of fresh green leaves, in the centre of which lie the two splendid eggs, usually white in ground colour with every shade of rich brown and rufous markings! Such moments repay the true lover of nature for all the labour and risk. Contrast his feelings with those of the "collector" who

EGGS OF GOLDEN EAGLE. (Size 3·1 in. × 2·35 in.).

pays a man to take both the risks and the eggs for him! But whether the object of the quest be to take the eggs, to obtain photographs of the nests or to see the birds in their wild state, it brings a man into touch with one of the most fascinating of studies. The mere watching of these glorious birds in their haunts is a revelation. The marvellous ease of their flight and the rapid adaptation of their great wings to effect every turn and wheel in mid-air is a never failing joy to witness. Seldom is this seen

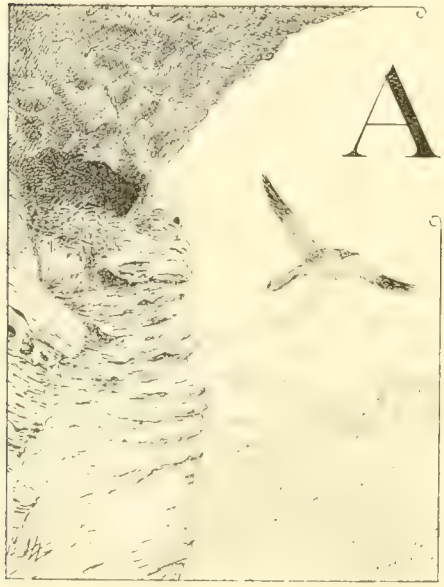
with better effect than when a pair of Golden Eagles indulge in a little play around some great cliff, which they may possibly be prospecting with a view to nesting. After various beautiful circlings high overhead one will suddenly make a wider curve and swing downwards and inwards until it enters the shadow cast by the precipice. As it nears the cliff the great feathered legs are dropped and it alights with a lurch on some projection of rock adjacent to the proposed nesting place. For one moment it steadies itself with a few flaps of its huge wings and then folds them leisurely across its back. Soon the other bird will descend rapidly from aloft with a prodigious swoop which carries it on a downward curve far below the point where its mate is resting and before the eye can grasp what it is about, and without any apparent effort, the downward movement is changed into an upward sweep which carries it to the same spot as the other. For a few seconds there is a shrill bickering and mighty flapping of wings, quickly followed by first one and then the other hurling itself as it were into space, whence, with expanded wings, they rise buoyantly once again into the bright sunlight above the cliff and recommence their aerial evolutions. This have I seen at times, lying prone amid the rocks and sweet-smelling cistus in some wild valley enclosed by the great cliffs above which the Eagles play.

CHAPTER VII.

THE EGYPTIAN VULTURE OR NEOPHRON

(Neophron percnopterus).

A bird of repulsive habits—Yet beautiful on the wing—Handsome eggs—A rock-nesting species in Europe—Gruesome larders—Nest and eggs—Plumage—Similarity of young to Bearded Vulture—Regularity in migration—Sites of nests—*La cueva del Cuervo*—An improvised landing net—"Laying" a camera—A Marten-cat in possession—A typical Vulture's cavern—A nest amid boulders—A nest in a cork-oak tree—The Calpe Hunt and birdsnesting—An evicted Snake Eagle—An undesirable tenant—Trapping a Neophron—Peculiarity of colour pigments on eggs—Neophrons in the Bayuda Desert.



ALL that can be said both as regards the evil habits of the big Griffon Vulture and of its splendid appearance on the wing applies with double force to this, the most unsavoury of birds, whose snowy-white plumage and black-tipped wings seen at a distance as it sweeps in wide curves high overhead combined with its light and graceful build, give it a general appearance of cleanliness and delicacy, which its habits so far as regards its feeding and nesting sadly belie.

$\frac{1}{6}$

EGYPTIAN VULTURE.

Neophron percnopterus (Linn.).

It is when the Egyptian Vulture or Neophron, as it is also styled, is seen close at hand that it is revealed in all its hideousness. The bright yellow shrivelled-up skin of the naked head is most repulsive, whilst the mere knowledge that the bird is one of the most unclean of feeders on the surface of the earth does not add to its attractiveness. And yet it must be repeated few birds present a finer sight when on the wing and still fewer lay more beautiful eggs; some varieties being among the handsomest eggs to be seen. True they differ greatly both in their colour and in the intensity of their shades but I have at times taken eggs which for richness of colouring eclipse even the beautiful eggs of the Osprey and the Peregrine. Many birds of prey lay very handsome eggs but very few have such gorgeous combinations of rich brown madders and purplish markings as have some of the Neophron's eggs in my collection.

The Egyptian Vulture belongs to a sub-family of the Vultures known as the Neophrons and is abundant all along the Mediterranean basin and in Northern Africa. It migrates southward every winter and has been often met with as far south as Rhodesia. Large numbers annually pass northwards through southern Andalucia in February and March, whence they spread all over Spain. At this time of the year they frequently may be seen collected in considerable numbers in trees. They almost invariably nest in rocks and their nesting in trees in Andalucia is so unusual that when I many years ago found one nesting in a cork tree it was considered a remarkable incident and was duly chronicled as such in the *Ibis*. The allied species in India (*N. gingianus*) habitually nests in trees and I have of late years heard of cases of the Egyptian Vulture doing the same in parts of Spain where rocks are not found, such as the plains of the Guadalquiver. Opinions differ as to whether they ever take living things. Although I have seen them constantly at all seasons for many years, I have

personally never seen them carrying anything alive. But I believe that they capture both lizards and small snakes, for I have found fresh remains of both of these in their nests.

Again in the majority of Neophron's nests I have visited, and I have visited scores, there have been a number of mummified heads of the big Ocellated Lizards. True, there is a possibility that other birds kill and eat the lizards, leaving the heads and that the Neophrons pick up these, but as I have said, I believe that they take reptiles. That they are famous collectors of all unconsidered trifles is well-known. A list of all the articles found in their nests would be simply interminable. Setting aside their main stand-by as scavengers of the lowest type, proofs of which are to be found in almost every nest, I have come across kittens, rats, hedgehogs, tortoises, snakes, lizards, toads, frogs, remains of foxes, of dogs and of fishes and lastly, a defunct young Griffon Vulture, all either in a putrescent or mummified condition. In addition to animal remains there is usually a miscellaneous collection of pieces of old rope, filthy rags and paper. Among the more unexpected articles I may mention a small bag of flour crawling with mealworms and a playing card—a King of Clubs!

The nest usually has a foundation of sticks and is warmly lined with goatshair and lambswool, in this respect closely resembling that of the Bearded Vulture, but of course on a very much smaller scale. Two eggs is the usual number, although sometimes only one is laid. These vary greatly in colour and as a rule each nest contains one egg much more marked than the other. The first of the pair laid would seem to be usually the richest in colour and for a long time I adopted this theory, until I came across a pair, of which the one with obsolete colouring was well set, whereas the darker one was quite fresh. From this it will be gathered that sometimes a considerable interval elapses between the dates of laying of the eggs. Some eggs are richly coloured all over with dark brown

and rufous shades, others have a white ground with reddish-brown blotches. Sometimes one egg will be strongly marked with brown and the other speckled and marbled with pale purplish markings. The young are almost naked when first hatched out, a sparse

NEOPHRON'S NEST WITH DEAD RAT IN LARDER.

growth of very long white down only partially concealing their skin. Young birds when fully fledged are dark brown all over and at this period of their existence, owing to their wedge-shaped tail have much the appearance of Bearded Vultures on the wing, of course they are only half as large but in the absence of other

birds to enable one to form an opinion as to their size, such a mistake is possible. I confess to having made it twice myself, at far distant places; once amid the rocky hills near Philae, during the Nile Expedition of 1884, and once in southern Spain. On each occasion, the advent on the scene of an adult Neophron in its black and white plumage quickly disabused me of my mistake, but I mention the circumstance as showing how a person well accustomed to both species can make a mistake.

It is curious that whereas in Egypt and Nubia immature Neophrons in the brown dress swarm and at times and places greatly exceed those in the white plumage, they are rarely seen in southern Spain save when first they leave the nest. In fact the proportion of adult to immature birds is overwhelming. Thus on 24 March 1894 I noticed twenty white to one dark brown bird roosting in the cork trees. Similarly throughout the whole spring of 1907, I saw but one dark brown bird among many scores of adult birds. If, as is probably the case, they do not acquire the adult plumage for three years, it must be concluded that only the adult birds migrate to Europe for the nesting season. Every spring they arrive in hundreds almost invariably in pairs, sometimes ten or fifteen pairs together passing northward. The largest number pass during the last week in March. It is interesting to see how almost to a day a pair will arrive from the African coast and take possession of the crag where a nest was in the preceding year. I have seen examples of this on many occasions.

The favourite site for the nest is in a cavern or shelf protected from the rain by an overhanging rock. Very rarely have I seen a nest which was not thus protected. I know of several situations which are used some years by Griffons and in others by Neophrons, also other sites which are used by Ravens and Neophrons. In justice to the Ravens I have never known them return to a place the year after a Neophron has defiled it, but I have often seen the converse.

Like many other birds of prey, Neophrons at times nest in the most difficult and inaccessible places. Thus I know of a nest in a small cavern or rather hole in the face of a cliff over 400 ft. high

LA CUEVA DEL CUERVO A NEOPHRON'S CRAG.

and not 40 ft. from the bottom. The cliff is known as *La Lata* "the tin plate," from its smoothness. To get this nest would require several hundred feet of rope.

Again I know of others in caves on overhanging cliffs which are practically impossible to reach and assuredly are not worth the trouble to attempt. One of the most artfully placed nests I know of is in a pinnacle rock on the side of a low sierra, not more than 30 ft. or 40 ft. in height which is unclimbable save at one point.

The crag is riven in two by a deep and narrow "joint" or fissure and the nest is placed on a ledge in the same, at a point about one-third of the height from the top, and the entrance to it is equally impossible to reach by escalade from below or by descent with a rope from above since the rock overhangs as can be seen in the picture on the preceding page. From time immemorial a pair of Ravens had nested in this crag which is known to the country folk as *La cueva del Cuervo*, The Raven's Cave, but having been disturbed the Ravens deserted it and for the last fourteen years it has been usually occupied by a pair of Neophrons.

In 1894 I found the Neophrons in possession and climbed to the top of the crag on the far side, but was apparently no nearer getting at the nest than from the ground below. Unluckily for the Neophrons, I was able to drop some 12 ft. down the fissure, at the point where the speck of light is to be seen close to the summit and thus get on the same level and within about 6 ft. of the nest. From this point I could see the eggs but it was impossible to reach them since between me and the nest the fissure narrowed to only a few inches. I however extemporized a landing net with a cane and a small tin insect-box lashed at the end of it with which I extracted the eggs. In this nest were two wild boar's tusks of some size. Some years later I again visited the same spot and found it tenanted. My object on this occasion was photography and I managed to push my Kodak camera at arm's length into the narrow crevice. It was impossible to look into the finder, but I propped the camera on bits of rock and lay it as true as I could and gave a long-time exposure. As will be seen, I got rather more

of the wall-like side of the fissure into the foreground of the picture than I needed but in the circumstances I was lucky in getting a picture at all.

NEST OF NEOPHRON IN NARROW FISSURE.

Over the edge of the nest the tops of the cork trees in a wooded valley below the crag can be seen in the picture. The

ordinary line of approach to this pinnacle rock is along this valley in full view of the entrance to the nest. Knowing as I now do of the Raven's cunning habits of making use of a front and back entrance to its nesting place whenever possible, I realize how it came about that this crag obtained its name, for surely never was a place better adapted for a bird to enter or leave without attracting attention.

A few years ago I had a curious meeting in this cave with a beautiful Marten Cat (*Mustela foina*). I was squeezing myself down the fissure on my way to the nest when my daughter, who had climbed to the top of the crag and was watching my descent, called out to me there was an animal in the cavern close to me and looking round I saw on the level of my face through a rift in the rock a Marten crouching low and showing a fine set of teeth. Quickly drawing my pistol I fired at it at a few inches range! The Marten although shot through the body managed to spring out of the cave and bounding across the top of the crag disappeared into a deep cleft where it was impossible to extract it. It was a disgraceful let-off but should anybody deride my non-success, I would suggest they try for themselves the amusement of putting a hand into a cavern held by a truculent Marten Cat, possibly with kittens not far off.

I know of a big cavern some hundreds of feet up the face of a limestone cliff in the Serrania of Ronda where, in some years, several Griffons nest in close proximity one to another. To reach this cavern it is necessary to sidle along a very narrow and somewhat dangerous ledge from one flank of the cliff. Several of the Griffon's nests are either on the floor of the cavern or on convenient ledges around it and, once the cavern is reached, can be literally walked into. But there is a sort of natural balcony running along one side of the cavern which can only be got at by climbing a fig tree for about 12 or 15 ft. (the topmost branches can be

seen on the left of the picture below) and then swinging oneself from it on to the balcony. At the far end of this is a considerable

A VULTURE'S CAVERN.

(The Neophron's nest is in a hollow behind the stone balcony in front of the figure on the right).

ledge where some years ago I found a Griffon's nest, a picture of which appears at p. 44.

In 1907, I visited this cavern with some young naval officers.

There were no Griffons about, which I accounted for by the fact that a pair of Golden Eagles were nesting in the big cliff just above. A pair of Neophrons had however taken possession and I was fortunate in being able to take a picture of their nest with my Goerz lens. I subsequently sent my party up the tree to inspect the nest and took a photograph of them at the moment the leading climber had reached it and was looking into it. I give the picture since it is eminently characteristic of the situations in which both Griffons and Neophrons most delight.

Although I have seen some hundreds of Neophrons nests in all sorts of situations, some most inaccessible and others the reverse, it is only within the last few years that I have found them nesting practically on the ground. Twice, once in 1903 and once in 1907, have I come across nests built in a crevice amid big boulders on a hill side within a few feet of a mountain path! In each case the birds undoubtedly relied upon the remoteness of the situation and the fact that the path led nowhere save to a tract of grazing for goats and cattle. As shown in the picture on p. 383 a man standing on the rock in the centre can reach the nest in the small cavern just above it. The photograph is taken from the track. The fact that there are hundreds of similar valleys overgrown with giant heath and cistus and dotted with big grey rocks in all directions, all bewilderingly alike, no doubt influenced the birds in their choice of quarters. But when I recall the long days I have spent and the arduous climbs I have made when in quest of Neophron's nests, such an example of a nesting station is a veritable *reductio ad absurdum*.

The example of an Egyptian Vulture nesting in a tree which has been already alluded to is a curious one and well illustrative of the danger of generalizing on the habits of wild birds. Prior to finding this the description that this bird "invariably nests in cliffs" was generally accepted.

NEST AND EGGS OF EGYPTIAN [illegible]

It was on 6 April, 1879, when riding through the Cork Woods near Gibraltar, on one of my usual tours of inspection of the nesting stations in the district that I visited a nest of the Snake Eagle, which had been occupied by these birds in 1877. This nest was on the horizontal branch of a cork tree about 20 ft. from the ground.

NEOPHRON'S NEST AMID BOULDERS ON A HILL-SIDE.

Seeing that it had been recently repaired, I climbed up to it and found it freshly lined with goatshair. Since Snake Eagles invariably use fresh green ilex boughs with leaves on them for lining their nests, this somewhat puzzled me. Still, it was plain that the nest had been recently repaired and, as if to clinch the matter, a

Snake Eagle was soaring overhead and making a great outcry at my presence. Five days later I was again on my rounds and again climbed to the nest, only to find it empty. But a lot more goats-hair lining had been added since my previous visit. The old Snake Eagle was again flying near the spot. Yet again, five days later, on 16 April, I was out with the Calpe hounds and we found a fox near the Duke of Kent's Farm and after some ringing around the briars there he started away for the Soto Gordo and was eventually killed near the Alcadezar Crags. During the run we passed close to the Snake Eagle's tree and for a third time I saw the old bird close to it. Determined to solve the mystery, two days later, on 18 April I once again rode out to the nest and approached it warily. When not 20 yards off I saw a big bird sitting in it which on hearing my approach raised its head—the hideous yellow head of the Egyptian Vulture! At last I had accounted for the seeming departure of the Snake Eagle from its invariable habits. I climbed up and found the nest contained one egg of the deeply marked variety. The Eagle's nest was, to put it plainly, a beastly sight owing to the Vulture's alterations and additions; I suppose like other new tenants of old dwellings, she would have described them as improvements. For the freshly placed goatshair of a week since was now smothered with filthy rags, bits of tarred rope, manure of various sorts and putrid remains of animals and fish. I took the egg and put in a trap; the old bird returned very soon and settled on an adjacent bough whence she walked into the nest. Something however aroused her suspicions, for she suddenly took wing. Exactly a week later, 25 April, I was again on my rounds and being still unable to account for the presence of the Snake Eagle near the Neophron's nest, I visited the cork-tree.

To my great surprise the old Vulture was sitting in the nest and on climbing up I found a second egg, very pale rufous in colouring and smaller than the first. This egg was quite fresh and was, as far as I could judge, laid a week subsequent to the first one.

I was determined to trap the old bird as a proof of the unusual circumstances attending her nesting. I had with me a hard-boiled egg. It did not take long, with the aid of my sketching appliances, to colour this egg with a judicious mixture of vandyke brown and light red. Then, climbling up to the tree and noting on which side of the nest the bird entered, I placed my trap near the edge and the hen's egg in the centre of it.

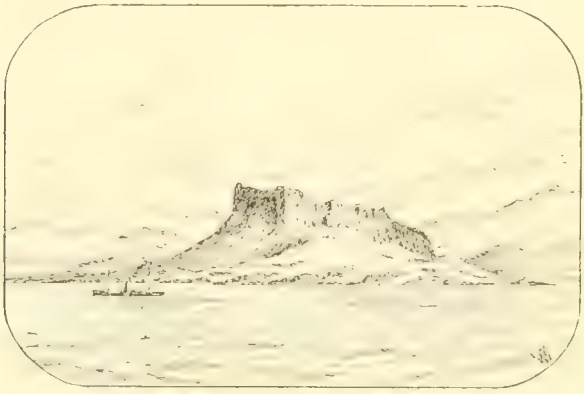
After lying in ambush under a clump of bright cytisus for exactly twenty-five minutes, the Neophron returned and alighting on the bough, as before, walked in and sprang the trap, which held her securely by one hind-toe, and she fell to the ground. Throwing my jacket over her, she was soon bound captive and conveyed to the Rock. Here I secured her in a "falconer's brace" and she waddled about for some days and fed heartily on anything she could get, but her presence was not appreciated in the Regiment and after a few days interesting study of her pretty ways I removed the brace and let her go, none the worse for her brief confinement.

There is a peculiarity about the egg of the Egyptian Vulture which is seldom met with in the case of other birds' eggs. The colouring, especially that of newly-laid eggs, is of so superficial a nature as to come off easily. After a severe climb on a hot day I have more than once damaged an egg by taking it up in my warm hand and I have a peculiarly richly marked egg now in my collection which shows the places where my perspiring fingers gripped it when engaged in blowing it, nigh thirty years ago.

There is something peculiarly unbirdlike and uncanny in the general appearance of these birds and also in their movements on the ground. I have a lively recollection of their habits and customs when in the Soudan in 1885. About a month after the battle of Abu Klea I was ordered to make a sketch of the place where our square had received the onslaught of the Arabs. The

bodies of the latter lay about in hundreds, mixed with scores of the swollen carcases of camels and horses. Apparently both the great Marabou Storks (*Leptoptilus crumeniferus*) and the larger Vultures (*Vultur auricularis*, *Gyps rüppelli* and others) had given up the task of clearing up the battlefield as one quite beyond their powers and had gone to the more convenient scenes of our fighting near the Nile, where I had seen many congregated. But the Egyptian Vultures were evidently not so easily daunted and pairs of these evil-looking birds were to be seen amid the throng of white-coated men, which lay thick in places on the hot sandy hill-side, stalking from one to another as if undecided where to recommence operations.

Some ten days later, during our retreat across the Bayuda Desert, these birds constantly accompanied us, halting when we halted. I have a peculiarly vivid impression of awaking at grey dawn and perceiving close to me a pair of white birds whose ghostly forms in the mysterious early morning light of the Desert seemed more than ever uncanny as they walked about among the recumbent forms of our men still asleep in their bivouacs.



$\frac{1}{7}$

GRIFFON VULTURE.

Gyps fulvus (J. F. Gmelin).

CHAPTER VIII.

THE GRIFFON VULTURE (*Gyps fulvus*).

Vulture's reputations—Horrible appearance when feeding—Splendid sight on the wing—Personal cleanliness—A tame Griffon—A great bather—The fascination of large birds—My first Vulture's cliff—An unscientific climb in 1878—Nests in caverns—Passages through uptilted strata—Griffons' nests—Great variety in style—"Marked" Griffon's eggs—Dimensions of nests—Time of nesting—Carrying materials for nests—Periodical repairs—Sanitary precautions—Carrying powers of beak and foot—Young Griffons—Habit of simulating death—and extreme sickness—Closing an interview—The Vulture's ruff—Successive stages of plumage—Powers of resistance—Savage appearance—But harmless and afraid of man—An exception to the rule—A wounded Griffon—Vast numbers of Vultures in Spain—Habit of roosting in trees.

VULTURES have deservedly acquired an unsavoury reputation, and it would be hopeless to expect the average traveller who has seen them intent on their normal occupation of feeding on some carcase, not infrequently putrid, from viewing them with intense disgust and abhorrence. So intent are the birds as they swarm round a dead animal and rend it to fragments with their powerful beaks, bolting huge lumps, that it is easy enough to approach close enough to watch their every

movement, and very unpleasant they are. Setting aside their admitted want of discrimination in the matter of food, at any rate according to our tastes, and one or two of their habits and customs immediately connected with it, to which allusion will be made later, they are without question, when on the wing, among the most magnificent of birds. To watch them circling thousands of feet overhead on the look-out for food or sailing past one of the grand cliffs whither they resort to nest in big colonies is a never-failing joy. During the many years I have spent among wild birds I have from time to time induced friends to accompany me to some of the nesting-stations of these birds and have as often witnessed the surprise and delight they have betrayed on first seeing the Vultures on the wing in these localities. On such occasions one is far removed from the spot where the birds have found their last unsavoury meal, and one only thinks of them and sees them as splendid birds with vast expanse of wing endowed with most marvellous powers of flight.

Those who have only seen a party of Vultures fighting over a carcase and defiling their plumage with its horrible fragments will hardly credit that the Vulture at home, given reasonable time to perform its toilet after one of its orgies, is one of the most spick-and-span of birds. Under its feathers is a mass of snowy white down which is ever kept in the most irreproachable condition. Those who are taken aback by the apparent inconsistency are invited to inspect the case of Vultures at the British Museum of Natural History and to judge for themselves of the correctness of my assertion. The big female bird with outspread wings to be seen there was shot from the nest and skinned and preserved by me, and was in exactly the same beautiful clean condition when first killed as now. Again, a young bird taken from the nest and brought up on fresh food is as little objectionable as is any other bird kept in captivity. I have put this to a practical test and

kept a young Griffon for over two and a half years; during that time it not only was never in the least offensive but kept its plumage in the finest condition imaginable. A great bather, its chief delight was to be played upon with a garden hose, when it would expand its wings and gyrate slowly so as to let the water strike every part of its body. A favourite position was to throw itself on one side and expand the disengaged wing so that the water could strike its axillaries with force; after some minutes of this treatment it would turn round and similarly expand the other wing for a like course of spraying.

For the purposes of our national and other collections I have from time to time killed and skinned Vultures and Eagles of various sorts, and my experience is that, apart from their food, there is little to chose between the two classes of birds. A Vulture that has not recently had a big meal is in itself, no more unpleasant to handle than is any other big raptorial bird. In fact I have had far more trying times when engaged in preserving the body of an Eagle, especially of the type which habitually feed upon snakes and big lizards, than when similarly engaged over a Vulture. All the same, I have no particular desire to repeat the process in either case.

The fascination which large birds and especially large raptorial birds have ever had for me would be difficult to explain. From the moment when I first saw Vultures on the wing I became obsessed with the desire to find their nests and see them at home. I had nobody to put me in the way of this, as I have done for others since, and I had to work on my own lines with no help and much discouragement, since I was at the time ignorant of the language of the country, and my birdsnesting proclivities were viewed with pity, tinged possibly with just a little contempt, by not a few of my more enlightened brother officers.

Naturally enough, I directed my quest in the first instance to

the largest and most inaccessible precipices, which, as we are all told from our childhood, are the home of Eagle and Vulture. Nor was I disappointed in so far as seeing the birds went, but they were nesting in situations which were either absolutely impossible to reach without ropes and plenty of them, or by cliff climbing of the most perilous and adventurous type. As I had neither ropes at hand nor any experience of rock-work at the time, I had in the first instance to accept defeat. Three years elapsed before I was able to make an expedition to the same spot: during that interval I had profited by my former experiences and had become a fairly competent cliff climber. I had, above all, by going aloft at sea obtained the necessary confidence in dealing with heights. Previous to this I was looked upon as an expert tree climber; in fact, there were few trees which I could not climb and none which had defeated me where reaching a coveted nest was concerned. But there is a vast difference between working up the top of a tall tree, possibly 100 ft. high, with a good handhold, and working among crags where the heights are reckoned in hundreds in lieu of in tens of feet and the chances of a sound handhold are most uncertain in places. The cliff where I obtained my first Griffon Vulture's egg has since become well-known owing to an account of my expedition thither, which I wrote to the late Henry Seebohm, having been published in his work on "British Birds' Nests and Eggs," for the Griffon is by courtesy a British Bird owing to a wanderer having been once taken in Ireland. An old friend of mine, however, a famous ornithologist, now dead, who had seen thousands of Griffons in his life, was certain he saw one in the New Forest about twenty-five years ago.

This cliff is a very imposing mass of sandstone which rises over six hundred feet from the stream at its base; a portion of it is much fissured and broken and contains numerous caverns wherein these big birds delight to nest. This part is easily scaled by any

good climber. Other portions however to the eye are as smooth as a wall, and decidedly perilous to traverse. The whole surface of the cliff slopes at 60 to 70 degrees, and the strata at places afford a precarious foot-hold and hand-hold. A distant view of this great cliff as well as one showing a portion of the face of it will be found in the chapter dealing with Cliff climbing. Owing to want of experience I attempted to scale this grand cliff the wrong way and although I was fortunate enough to succeed, I deserved to have broken my neck. I say this with intent, for some sixteen years later I went down this same cliff with the aid of a light Alpine Club rope and revisited the various spots I had escaladed on the occasion of my first expedition, and in the light of wider experience and of many adventures I can only repeat that it was sheer good fortune that I came out of that cliff unhurt on the occasion of my first visit. More particularly do I recall two absolutely culpable errors, the results of over-confidence and of lack of knowledge of the unwritten rules of climbing. Once I let myself drop on to a ledge whence it was impossible to return, for it is one thing to drop neatly with one's feet on a few square inches and another to use the same restricted area to spring from so as to recover one's hand-hold even a foot beyond one's reach overhead; more especially if there is a matter of 300 ft. or so between the place where one is standing and the next step below. In this instance I was forced to continue my climb, and it was absolutely a game of chance where I should come to next and whether I should be able to find a way out.

The second mistake was the result of even more unskilful conduct, for I swung myself round a projecting crag into a cavern which did not admit of egress by the same route. A sketch of this awkward spot is given in the frontispiece of this book. Here I nearly remained for all time, but fortune once again favoured me, and by means of emulating the action of the chimney-sweep

of old I managed to scramble up a fissure for some 50 ft. and thus make good my escape. To this day I can recall the sensa-

NEST OF GRIFFON VULTURE IN A CAVERN.

tions of the start from that nest at a point where the fissure was widest and up which I had to spread-eagle, back to the cliff,

and with nothing in front of one except the fresh air and a magnificent view!

Although many, probably the great majority, of Griffons' nests are placed in caverns or, in their absence, on ledges, which are alike difficult and dangerous to reach, this is by no means always the case. Every year during the course of my wanderings in wilder Spain do I come across nests which are easy of access, often without the aid of a rope or involving climbing in the crags-men's sense of the word; especially in remote districts where these birds have not had their nests harried. But even where nests are placed in dangerous and difficult sites, there is sometimes a means of avoiding a direct attack in such places. Thus in about half a dozen instances as already described I have taken advantage of "joints" or other geological formations of the cliffs and the existence of deep chasms and fissures near the summit of the tilted-up crags to penetrate from the reverse slope through the heart of the hill and emerge on a terrace on the face of the precipice, at times over a hundred feet from the top. It seems almost an unfair advantage to take, since the birds obviously do not reckon upon such tactics. All the same, on several occasions it has proved a most successful method of approach, and has been of late years, since I have been partially disabled, of peculiar aid to me in reaching many besides Vultures' nests. In such situations it frequently happens that some point is reached where extreme care has to be observed in traversing an awkward place. Once over such a spot and at the first nest it not uncommonly occurs that several other nests in the immediate vicinity can be literally walked into without any appreciable risk.

Of the nest itself it is difficult to write, for few birds seem to hold more divergent views on the subject of the size and shape of their nursery than do Griffons. Hence it is that whereas one

writer styles the nest a great and untidy platform another describes it as a neatly finished and lined bowl. Having had the opportunity of visiting many scores of nests I have come to the conclusion that individual Griffons vary in their ideas of comfort and cleanliness almost as much as do human beings, and that in consequence both of the foregoing descriptions are accurate in certain cases.

Some may ask why I thus visit so many nests of the same species of bird. The reply is that although the Griffon usually lays one egg (I have never seen more than one egg in a nest, despite the tale that they sometimes lay two, which I doubt), normally pure white; sometimes their eggs are marked with rufous spots and streaks. Such specimens are of course a joy to all who wish for a rare addition to their collections. Hence I never see a Griffon's nest in a situation where it can be reached without undue risk or a sacrifice of valuable time but I pay it a visit, ever sanguine of being rewarded by the sight of a handsomely marked specimen. As a matter of fact I have only come across three eggs with any pretensions to markings in over thirty years, in spite of many scores I have seen. Possibly I have been unlucky, but my estimate is that on the average not more than one in forty are thus marked. Yet one day I had the good fortune to get two marked eggs out of eight nests visited.

The typical Griffon's nest is placed in a cavern, when a cavern is to be found, which, as I have said, partly explains their marked predilection for the sandstone cliffs of southern Spain rather than the limestone, which offer fewer suitable sites. Failing however a cavern or deep fissure, these birds will nest on an open ledge or on the big terraces which are found on some of the great cliffs.

The nests have a foundation of big sticks, dried branches of trees and of heather, the platform varying from 2 ft. to 4 ft. in diameter. Some have a fairly neatly formed basin about 15 in.

NEST OF GRIFFON VULTURE IN DEEP CREVASSE

across, lined with dried tufts of grass, palmetto, &c., whilst others have but little more than a central depression amid a collection of the stiff quill feathers which the old birds have obviously gathered from some adjacent Griffons' roosting station. Griffons lay as a rule early in February, although I have seen eggs a month earlier and have taken fresh eggs in March and April and still more rarely in May. Most possibly those found in April and later are a second laying, due to the first having been taken. On one occasion I watched no less than ten pairs of these birds busily engaged in bringing materials to their nests; this was on January 24; I was therefore not a little puzzled at seeing them some three months later carrying good sized leafy branches, freshly broken from cork and ilex trees, to the cliffs.

The Griffon often carries its nesting materials in the beak, the foot not being so well adapted for such a purpose. The appearance of these great birds steadily winging their way to some crag with a leafy branch of cork or ilex or wild olive, a foot or more in length, held in the beak is absurdly suggestive of the curious mediæval pictures of the dove returning to the ark with the olive branch. For some years I imagined that the birds when thus engaged were building a new nest in spite of the lateness of the season. One day however after seeing a Vulture enter a cavern, branch in beak, I climbed up to it and found a newly-lined nest, the infant Vulture in it having been provided with an entirely new change of bedding in the form of freshly cut branches of green ilex and heath placed on the top of the dirty and much used nest. Since then I have repeatedly found other Vultures of similar sanitary sense. But although Griffons thus carry branches of trees in their beaks, when engaged in building their nests they are frequently to be seen flying to the cliffs, holding big sticks, straw, tufts of grass and sundry other objects in their feet. When thus occupied their legs are stretched out behind, in place of being

retracted, as is usual with birds carrying things on the wing. I have often watched Griffons sitting upon the upper branches of a cork-tree

YOUNG GRIFFON VULTURE, ABOUT FOUR DAYS OLD.

busily engaged in breaking off branches with their powerful beaks to convey to their nests. There can be no doubt that when a Griffon

perched on a bough has thus broken off a branch, it is more convenient for it to carry it in the beak than in the foot. On

YOUNG GRIFFON VULTURE, ABOUT TWO WEEKS OLD, FEIGNING DEATH UPON NEAR APPROACH OF CLIMBER

the other hand, any objects they lift from the ground are usually carried in the foot. Cliffs much frequented by Griffons as nesting-

stations are far from being ideal spots, and the pungent smell of death and decay which pervades them is one of the minor trials the enthusiastic naturalist has to bear during the course of his studies.

The egg is of considerable size and very globular in shape measuring about 4 in. by $3\frac{1}{2}$ in. The young when hatched out are lumps of white down with black bead-like eyes. They rapidly increase in size; when only two weeks old they weigh five pounds and their primary feathers begin to show, whilst the neck feathers which eventually form the ruff are distinctly visible. When the climber suddenly comes across a young Griffon in the nest, no matter what size it may be, (Griffons remain in the nest for some months and until nearly full grown) it instantly simulates death by throwing itself flat with its head lying in a dislocated fashion on one side and remains motionless thus for some time. The illusion thus produced is often heightened by the local conditions. Thus when I came upon the young bird two weeks old figured on the last page, it was a stifling hot day in May. The sun's rays beat fiercely into the gully on the rocks surrounding the nest and there was not a breath of air. The young bird lay with its head on one side and with the nictitating membrane drawn over its eye, as shown in the picture, to all appearance dead. All about the dirty nest were swarms of brilliantly green "blue-bottles" which settled on and crawled about the young bird. What between the heat, the sickly effluvia of the place, and the stillness only broken by the buzzing of the carrion flies it was a complete counterfeit presentment of death. It was not until I had got out my camera and taken a couple of pictures of this most accomplished actor that it apparently came to the conclusion that it was about time to come to life again and vary the entertainment.

I have seen young Griffons only a few hours after emerging from the egg adopt this means to avoid observation, and, as will

be seen in a subsequent picture, they continue to resort to it when nearly full grown. When moved or disturbed they utter a feeble twittering call.

YOUNG GRIFFON VULTURE, ABOUT THREE WEEKS OLD.

When a young Vulture finds that its most earnest attempts at simulating death are ignored and that the intruder persists in remaining in the vicinity, it adopts more active and stringent methods of inducing him to withdraw, which are as unexpected as they are unpleasant. For, after recovering consciousness as quickly as it had pretended to lose it, it makes a series of bows

accompanied by a regurgitating process which quickly ends in the rejection of the whole of its last meal! When one considers what this must have been, it is best left to the imagination what it is like when thus presented to the too importunate naturalist.

I made the discovery of this pretty habit in a very simple fashion. It was the first time I had got among the young Vultures and I was naturally much interested in seeing a young bird, which had assuredly never set eyes on a human being before, instantly sham death upon detecting my approach. Having got out my camera and taken a picture of it in this position at a few feet range, I proceeded to wedge the camera on the rock so as to take a time-exposure. The ledge I was on was narrow and behind me was space, the foot of the crag lying some hundreds of feet below. It was at the critical moment when I was deeply engrossed in the usual agonies of hand-camera work that my subject, rising from its simulated trance, made me a present of its last meal! Since then I have seen many young Griffons and have suffered from their manners and customs, but the memory of that first introduction to them and of my hasty departure upwards, for to retire was impossible, lives with me still.

The beautiful white ruff around the gaunt neck of a Griffon is a sign of maturity. As a nestling and during the first and second years it has a ruff, but in place of being one of fine white down it is composed of fulvous lanceolate feathers. The exact period when these give way to the adult plumage is uncertain, but I have proved by the bird I kept in an aviary and which now figures at the British Museum that the change does not come into effect at any rate before the third year. On the other hand I have seen parent Griffons who wore the miniature feather ruff in place of the white down one. From their movements I imagined them to be males; certainly all the females I have put off nests near enough to see the plumage wore the white ruff.

An adult Griffon weighs about 18 lb. (not 40 lb. as some writers on Spain have asserted), and the expanse of wing varies

YOUNG GRIFFON VULTURE, ABOUT SIX WEEKS OLD, FEIGNING DEATH.

from 8 ft. to 9 ft.; when on the wing the tips of their primaries are widely separated like the extended fingers of one's hand.

This and the extreme shortness and squareness of the tail are noticeable features, which render it easy to identify the bird at a great distance.

I have often been asked whether these great birds ever show fight when their nests and young are molested. As a matter of fact

YOUNG GRIFFON VULTURE, ABOUT EIGHT WEEKS OLD: THE OFFENSIVE-DEFENSIVE.

actually they never do, but it took me some time before I realized that they are far too much alarmed at the presence of man to attempt to attack him. It is of course obvious enough that a bird of such size and weight, and capable of moving with such velocity, could

by a well-timed swoop easily dislodge a man from any dangerous ledge, where both hand-hold and foot-hold are alike uncertain, only the fact remains that they never think of such a thing. Those who have not penetrated into their haunts can hardly imagine the loud rustling sound they produce by their movement through the air as they approach their nests. At times when I have been safely ensconced at the back of some cavern on the face of a cliff waiting for the chance of a photograph, the Griffons which had been sailing around high above the cliff, emboldened at seeing nobody about, have come swooping down to inspect their nests with a noise which can best be likened to a powerful steam-blast; this, heard for the first time, is decidedly startling. Sometimes when I have been climbing along the face of a crag a Griffon has suddenly rounded a corner of the cliff, gliding within a few feet of me with outspread and apparently motionless wings, its fierce looking head and eye bent inquiringly towards me. But the instant it detected my presence, it would heel over in its flight, and by a few strokes showing extraordinary strength sweep upwards and away.

On one and one only of my many scores of visits to Griffons' nests did one of these birds even attempt to oppose my approach. This was in 1907; I was working along the ledges of a tall cliff when I heard a loud hissing sound which was repeated again and again. On rounding a crag, I saw an adult Griffon standing up over her nest which contained an egg, not 15 ft. from me. So long as I stood still the great bird continued to strike a series of threatening attitudes, at intervals emitting a loud hissing sound much resembling an escape of steam. She was very loth to quit her egg and every time I made as if to depart, she subsided on it and recommenced sitting, only to rise again and hiss savagely when I returned towards her. I got out my camera and photographed her in one of these positions, but regret that owing to

the direction of the sun and the impossibility of my shifting my position on the narrow ledge I occupied, the photograph, although of considerable interest, is not sufficiently defined for reproduction here. Eventually the Vulture took wing, but so long as I remained in the vicinity she sailed round the cliff at times passing close to me with a mighty swish of wings in a most threatening manner. At intervals she would alight on some pinnacle crag within 30 yards of me and recommence hissing. Here, owing again to the position of the sun, I utterly failed to photograph her although I tried many times.

I tell this story at length because in all my long experiences of Eagles and Vultures I have known no other bird come so near to threatening a man as this.

Had this pugnacious Vulture but been aware of her own strength and of the weakness of my position on the narrow stratum of rock, she could of course easily have dislodged me. But I am well assured nothing would have induced her to approach me any nearer than she did. I can only account for her pugnacity by the fact that her stronghold was in a very remote sierra and in a position where she had probably never been approached save by some lad tending goats who would likely enough have been deterred by her threatening demeanour. I had not the heart to take that egg and was pleased to see her return to it as I ascended the cliff.

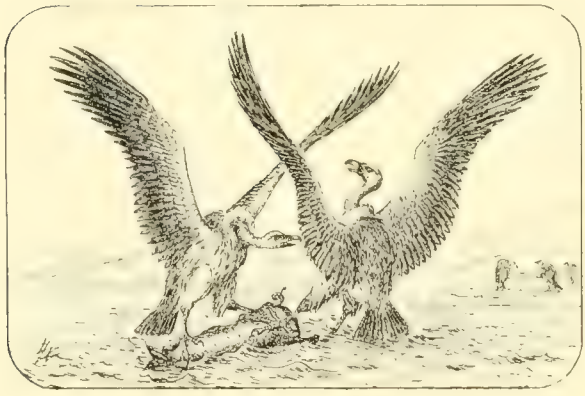
Again, only once have I seen or heard of a Griffon attacking a man and that was in the case of a wounded bird and hence cannot fairly be reckoned as a genuine example. It was at the time I was engaged in obtaining some Vultures for the British Museum. I had shot an old female from the top of a cliff as she left her nest and she fell into the scrub below. Upon going round to the foot of the cliff to pick her up, when forcing my way through the cistus and giant heath, I suddenly

came upon the poor bird lying in an open patch with a broken wing. The instant she saw me, she rose up and made one spring, and before I could parry her advance seized my arm near the shoulder in her powerful beak, tearing a hole in both coat and shirt and inflicting an unpleasant wound, and repeating the attack with great determination before I could despatch her.

It has ever been a marvel to travellers and naturalists how and where the immense numbers of Vultures seen in the countries they inhabit can find food enough. It is no uncommon sight in southern Spain to see eighty or more collected around a single dead beast. Not long since a cow died during the night close to my dwelling, and next morning there were seventy Griffons ready to commence work upon it. Small wonder that, with such a ravenous throng ever ready to perform the funeral obsequies, it takes but a short time for the carcase of horse or cow to disappear. On the other hand I shall never understand why a body is at times left untouched for weeks by the Vultures, though this is so. One of the most curious gatherings of Vultures I have seen was a large party in waiting on a drowned pig which lay some few yards from the shore of a lake, half-stranded in the shallows. First one and then another Griffon would attempt to alight upon it, when it naturally rolled over, dislodging the first comer, whose place was quickly taken by a second. At times the birds engaged in a furious duel over the carcass, beating the water into foam with their huge wings and giving vent to frantic twitterings, a curious call for so large and savage a bird.

When not in search of food, Griffons commonly collect in parties of from ten to thirty and perch on the summit of some crag, whence they can keep a good look out. Should the weather be wet and wild, they are much addicted to roosting in some big cavern among the sierras. In windy weather they collect in the more sheltered valleys and sit on the top of the cork-trees, often only

20 to 25 ft. above the ground. I know of some quiet valleys where, if a strong wind be blowing, I am sure of seeing over thirty Vultures thus at rest, especially after three o'clock of an afternoon, which seems to be the hour when they usually discontinue their marvellous aerial reconnaissances in quest of carrion.



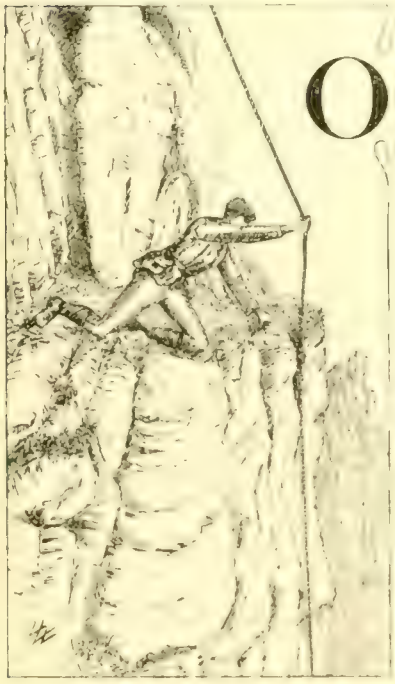
BEARDED VULTURE.

Gypaëtus barbatus (Linn.).

CHAPTER IX.

THE BEARDED VULTURE (*Gypaëtus barbatus*).

Popular superstitions—Bearded Vulture or Lammergeyer—An early nester—Repeated unsuccessful efforts to obtain eggs—Splendid powers of flight—A dramatic meeting—Encounter between Bearded Vulture and Griffon—Locate a nest—Description of cliff and surroundings—Reach terrace below nest—Ice and snow—Baffled—A forlorn hope—Reach the summit—Joining ropes—The descent—Am joined by Farquhar—The final lower—A jambed rope—Reach the nest—Bitter disappointment—Land on ledge below—The story of the jamb—Second expedition—Find a new nest—Description of situation—Reach point 100 ft. above nest—A dangerous cliff—A nasty descent—An overhung nest—Empty again!—An unsolved riddle—*Quebranta-huesos*, the Bone-breaker—A reputed habit—Watch Bearded Vulture carry and drop an animal's leg—It descends and feeds off fragments—Re-ascends with leg—Returns to carcass—Conclusive evidence of habit.



OF all the great birds of prey there is none which appeals more to the popular imagination than does the Bearded Vulture or, to give it the imposing title which it still bears in mid-Europe, the Lämmergeyer.

There has been some dispute as to the correct nomenclature of this bird, some advocating the first and others the second of the names given. Those who yet cling to Lämmergeyer do so partly for sentimental reasons; the bird is not British even in the most elastic interpretation and in the regions where it originally became known

to the world, Switzerland and the Tyrol, it has been since mediæval times invested with almost supernatural powers, from killing adventurous chamois-hunters or boys who sought to rob their nests, by knocking them off cliffs, to carrying off infants and, in its milder moments, preying upon chamois and sheep which it slew and carried off in mid-air to its eyrie in some appalling cliff, many thousands of feet high. Since it was popularly credited with directly causing the death of the sheep, goats, kids and lambs, which undoubtedly form its main food, it earned the title of Lämmergeyer = lamb-vulture, and it is this name which is still applied to it by the majority of people. Those who advocate the other name maintain that the great bird is vulturine in its habits, *i.e.*, never kills the beasts it feeds upon but simply resorts to the carcasses of those which have fallen from the cliffs or which have died of injuries or starvation due to their having been imprisoned in some spot whence escape was impossible. They also declare that the structure of the bird's foot does not lend itself to carrying its prey for any distance, but of this I shall speak later. The late Dr. Stark, who to my knowledge had exceptional opportunities of watching these birds in Europe, boldly asserted that in habits and feeding they were little better than the Egyptian Vulture, a cruel charge against such a noble-looking bird but of which the truth is I fear incontrovertible.

The opponents of the name Bearded Vulture pointed out how the bird was not a true Vulture and cited various points such as its well-feathered head and legs. The other school retorted by calling attention to the distinctly vulturine beak, and to the foot which approaches much nearer that of the Vulture with its long central toe and blunter claws than the Eagle's, and further justified the descriptive accuracy of their name in that the bird has a beard consisting of a tuft of black bristly feathers below its beak, ever most conspicuous, and argued that since its general appearance,

flight and many of its habits are distinctly vulturine, it merited the name of the Bearded Vulture.

In the Himalayas, where it resides, it is well-known to many sportsmen either as the Lämmergeyer or the "Golden Eagle" from its rich rufous colouring. It is probably owing to this that the name of Lämmergeyer has taken such a hold in our language since the vast majority of those among us who have seen it in a wild state are Anglo-Indians.

The late Professor Newton, one of the most learned (and shall I venture to add cautious?) of ornithologists looked on the matter as one which could only be solved by an investigation of "characters which are not superficial." Since my own field observations and experiences are mainly in accord with those who style the bird the Bearded Vulture, I have adopted that name and especially so, that all those who in recent years have had opportunities of watching these grand birds in their fastnesses are agreed as to the convenience of the term. Colonel Irby thus styles it in his "Ornithology of the Straits," as did Lord Lilford and Dr. Stark. The latter's experiences were extensive and unique as I have said.

On the other hand, I have not met with any modern naturalist or observer who can adduce any direct evidence to justify the older name of Lämmergeyer save that at the lambing season these birds like the Neophrons are frequently to be seen near the flocks of goats and mountain sheep for reasons given by Dr. Stark and quoted by Colonel Irby. After watching these powerful birds carrying the weighty limb of an animal in mid air, the idea has more than once struck me that the old tale of Golden Eagles carrying off children may without any very great stretch of imagination find their origin in the misdeeds of the Bearded Vulture. The mere term of Golden Eagle is suggestive of the likelihood of some confusion having existed between the two species. Thus, the

Bearded Vulture is very richly coloured ; in brilliant sunlight the bright tawny throat and underparts assume a veritable golden hue, far more so than do the pale tawny feathers on the nape of the Golden Eagle whence the latter derives its somewhat imaginative name. This golden colour of the Bearded Vulture is well-known to all the goatherds and mountain-dwellers in Spain, who invariably describe the birds as *colorado*, "reddish" in contra-distinction to the Griffon Vulture of fulvous appearance. As already mentioned, many Anglo-English sportsmen style the bird Golden Eagle and the famous traveller James Bruce, who met with it in the highest mountain north of Gondar in Abyssinia so far back as 1770 and figured it in his book published in 1790, did the same. It therefore seems likely enough that the inhabitants of the mountainous districts of mid-Europe may have likewise described the big bird of prey which was credited with sinister intentions on their infants as a Golden Eagle.

My first introduction to Bearded Vultures was of a very formal nature and led to nothing. A pair frequented some high hills a day's journey from Gibraltar and annually nested in a cavern in a low cliff at the top of a steep acclivity. I was in those days unaware of their very early nesting habits and in consequence never sought for the nest at the proper time of year.

This pair have long since left the locality. Ten years passed before I once again came across them, in a big sierra some ten miles west of the first site. Here they nested undisturbed for some years using two alternative sites, one in a small cavern only a few hundred feet above a goatherd's house and the other in a cavern very nearly the same in shape several hundred feet higher up the cliffs. Photographs of both these sites appear in Colonel Irby's book. It is over twelve years since they in turn abandoned this range of hills and went off without leaving an address.

The Bearded Vulture is, as I have said, a very early nester. I

have heard of eggs being taken in Christmas week. Dr. Stark took perfectly fresh eggs on 31 January and on another occasion eggs on the point of hatching on 4 February. The mildness or the reverse of the season and the altitude of the nest above the sea have apparently nothing to do with the variations in time of laying, despite the protestations of the goatherds who are ever emphatic on these two points. No better proof of this could be adduced than Dr. Stark's experiences, for, when he took the freshly-laid eggs on 31 January it was in a very mild season when the snow-line was fully 1,000 feet higher up the sierra than when he found the hard-set eggs in the same locality on 4 February—in an exceptionally severe spring.

When I was with Crown Prince Rudolf in the *Miramar*, he had with him two young Bearded Vultures, one just emerging from the down stage and a second three-parts grown, taken from nests in the Sierra Nevada. One of these birds was a full month if not six weeks older than the other, showing the irregularity of their dates of laying. From all I have seen and heard I think from 1 January to 15 February may be taken as about their usual period for laying eggs.

In all my wanderings after wild birds there was no species which so persistently defeated me in my object of obtaining its eggs or of photographing its nest and young than did the Bearded Vulture. Year followed year and although every season I managed to locate a few pairs at widely separated places, all my exertions were doomed to failure. Thus, one year I would find myself too early and another year too late. Some years owing to bad weather and the impossibility of travelling in the sierra in rain and mist, let alone climbing dangerous cliffs, a well organized expedition would end in total failure and ignominious retreat.

True, had I on such occasions elected to remain out in my mountain quarters a few days longer, I should undoubtedly have

accomplished my object. But here the human factor intervened for my companions were invariably officers of the Navy or Army or Civil officials whose leave of absence was restricted to a few days. As this account will show, the Bearded Vulture's nests which I had marked down for spoliation were situated in places which demanded a degree of both skill and nerve on the part of those who handled the ropes, which, with no aspersion on the genuine pluck of my excellent friends among the inhabitants, they lack and with good reason. For they do not understand rope-work and they are in consequence unduly apprehensive of the dangers attending it and hence by no means inspire the confidence in the man on the rope which is so essential to avoid disaster.

When on the wing, the Bearded Vulture is easily recognizable from the Griffon Vulture by its long cuneate-shaped tail which is full six inches longer than that of the Griffon and looks even more so when the two birds are flying high overhead.

The Griffon when soaring, habitually keeps its wings widely extended, the carpus and metacarpus forming a slightly re-entrant angle, the sharp pointed head drawn back into the encircling ruff appearing as if set in the apex of a very obtuse V formed by the extended wings. The primaries are all widely separated at the tips and for over a third of their length and can be counted at a great distance whilst the short square tail gives to the eye the impression that the wings are set on very far back in the body.

On the other hand, the Bearded Vulture when on the wing in quest of food, although at times it emulates the Griffon in its wide circles, when its primaries are similarly separated, has much more the appearance of the Eagle in its flight. As it glides along there is often a perceptible salient angle formed by the carpus and metacarpus, which increases greatly as the bird makes one of the wonderful dives which are so charac-

teristic of its flight. What strikes one most about the flight of the Bearded Vulture is its marvellous ease and the apparent absence of all effort which distinguishes it from that of the true Vultures and which makes it in my opinion even more graceful than the Golden Eagle's. For it is unusual to see a Bearded Vulture indulge in the heavy flapping flight which both Eagles and Vultures at time resort to. I am not alone in my views on the subject, for Dr. Stark who had watched many pairs was equally struck with its grace and seemingly effortless power.

But although the characteristics of a Bearded Vulture on the wing are so marked as to render its identification an easy matter with the aid of a glass at very great distances, years may pass before the wanderer in the wild country it inhabits may have the good fortune to see it close enough to appreciate its splendid appearance and colouring. Of course where a nest with eggs or young can be located, it is a simple matter to conceal oneself near enough to watch the birds at close range. But it is not everybody who has such an opportunity and in my own case it was ten years before I had the good fortune to see this truly magnificent bird at close quarters. The meeting was dramatic in its suddenness.

I was wandering about a low sierra in quest of nests and carried a gun, according to my usual custom at that time when on a solitary expedition. It was a glorious day in early spring and when I arrived at the summit, a great piled-up mass of sandstone crags, I set myself to watch and wait on events. The sun was extremely powerful and I was glad to find a shady nook only a few feet below the top of the pinnacle rock forming the highest point of the mountain. A great plain lay at my feet extending for many square miles westward and northward, dotted with countless herds of brood mares and cattle and droves of pigs. Over this both Griffons and Neophrons were sailing in graceful circles, ever on the look out for food. Here I sat, telescope in hand, from

time to time scanning a sierra beyond the plain which I suspected to be the home of a pair of Black Vultures. How long I sat there I do not remember but as I swept my glass across the distant hills to my front I chanced to pick up a big bird flying towards me. It was still over a mile, possibly two miles distant, but a second glance showed me it was a Bearded Vulture winging its way straight at me. Dropping my glass I gripped my gun which lay across my knees and glanced round for some shelter from view. Seeing none near at hand and realizing that any movement on my part might be fatal, I resolved to remain motionless where I was. On came the great bird, obviously unaware of my presence. Doubtless my stained shooting clothes assimilated with the weather-beaten rocks I was leaning against and, by bowing my head, my sombrero hid that greatest foe to all successful sport, especially Bustard-driving, or attempts at concealment in war or peace, the red face of a British soldier.

The Bearded Vulture was now within 50 yards of me, in another instant he would be assuredly mine and at that time, be it remembered, I was most anxious to kill one! Now for the first time in my life did I realize what an extraordinarily handsome bird it is, the fierce-looking head with silvered crown and black "moustaches," as well as the bristly black beard, contrasting with the rich red throat and breast, as with sweeping black pinions it came right at me. It was quite clear it was making for the crag only a few feet above my head as a point of vantage whence to survey the surrounding country. I had by chance already selected the same "look-out" and for similar reasons.

When the great bird was within 20 yards I sprang up and raised my gun. I shall never forget the savage look of its pale orange eyes, with the encircling blood-red membrane, as it suddenly checked its flight and, swinging round with a rush of wings resembling the noise produced by a steam jet, whirled away.

I *did not fire!* Somehow, it seemed to be almost murder to take that splendid life, and although my finger was on the trigger and the bird covered at less than 25 yards, after it had turned, I refrained. I have never regretted my self-control on this occasion, but what is perhaps more curious, since that day I have repeatedly had Bearded Vultures which were nesting within easy shot and I have, so far, never fired at one. I sometimes think that before I migrate myself, I may be led to slaughter just one, as something to keep me in mind, when I am no longer able to visit their haunts, of these truly glorious birds. But so far I have resisted the temptation.

From time to time in my wanderings I have come across many Bearded Vultures but never have I seen one again at such close quarters.

In the spring of 1902 I was living in the mountains between Malaga and Estepona and one day made an expedition to a distant cliff over which I had seen a Bearded Vulture flying on the previous day. I found a very fine cavern tenanted by Griffon Vultures, and as the country looked promising and I knew there were Bearded Vultures about, I decided to wait and watch. Some time afterwards a Bearded Vulture came into sight and commenced to play around above a cliff not far from my position. It was evidently not nesting there and from its movements I suspected and still suspect that the cave tenanted by the Griffon was one of its alternative sites. Subsequent events gave strength to my views, for presently the old female Griffon, not approving of our prolonged stay on the terrace below her nest, after standing up in her cavern and craning her neck over the brink to take stock of us, dropped off the ledge she was on and flapped away.

As she rounded the cliff above which the Bearded Vulture was soaring, the latter made for her and mobbed her. The

Griffon was evidently in mortal fear and endeavoured to avoid the meeting with its formidable relative. Next moment the Bearded Vulture, having swooped upwards above the Griffon, turned and struck her vigorously; the two huge birds became interlocked and, losing their equilibrium, fell vertically at least 100 feet.

BEARDED VULTURE SOARING AROUND SUMMIT OF CRAG.

It was a marvellous sight for a bird-lover. I had my camera in hand at the moment as I had been trying to take the Griffon standing in her nest and, swinging it round, tried to take a snap at the two great birds before they separated, but failed. The Griffon made off at speed and hardly shows in the photograph but the Bearded Vulture below it is, despite its minute size, recognizable as such owing to its length of tail.

I subsequently watched it wing its way across a great valley, over a thousand feet deep, to some crags on the opposite side where I have little doubt it was nesting. But at the time I was too crippled to follow it up and thus lost one of the chances of my life.

My final success after protracted efforts to obtain the eggs and photograph the nest of the Bearded Vulture is one of the most memorable epochs in my life, necessitating as it did five separate expeditions to a remote spot in three successive years and, what is more to the point, very nearly involving me in disaster on three of these.

It was in the spring of 1906 that after four years persistent search and many expeditions, during which I repeatedly located Bearded Vultures and visited various nesting places without result, that at last it seemed as if success lay within my grasp. A pair were known to nest in a certain big cliff only two days journey from civilization and accordingly I arranged for a four days trip and enlisted the services of three friends as assistants.

One of the greatest difficulties to be faced in expeditions into the higher ranges of the sierra is the vicissitudes of weather. It may often happen, especially during the winter months, that at the time those living near the sea level or a few hundreds of feet above it are enjoying splendid weather, the sierras may be shrouded in dense cloud-banks, making all bird watching an absolute impossibility. Further, heavy rainstorms may serve to fill the gullies with raging torrents and make all travel equally out of the question. Such has been my fate repeatedly.

At the first attempt on the Bearded Vulture's cliff we were favoured by fairly good weather, as regards the absence of fog and rain, but we came in for a desperately cold snap and suffered accordingly. On the second day of our journey we arrived at our objective a good hour before midday and halted for luncheon. Very

soon we saw first one and then the other of the Bearded Vultures sailing over the cliffs and shortly marked one of them enter a cavern about 250 feet above our position. With the aid of a glass it was easy to make out the huge nest and, as we watched the old bird moving about in it, we felt sure of our prey.

I, however, determined not to be hurried by my companions and having gained a suitable point immediately below the nest, I made a very careful reconnaissance of the place and with the following results. The hill before us consisted of a series of cliffs divided by steeply sloping terraces.[1] I may mention that the heights here given were ascertained subsequently by aneroid and the known length of the ropes employed, and, as is almost invariably the case, were found to be greatly in excess of our first estimate. It is one of those curious facts in dealing with heights that whereas those totally unacquainted with them invariably over-estimate them, men most accustomed to cliff climbing generally under-rate them. Thus in the present instance we estimated the cavern to be only 200 ft. above us; the mean of four subsequent observations by aneroid proved it to be over 250 ft.

Between us and the great cliff lay, at an angle of about 45 degrees, a talus of shattered limestone which had obviously fallen from the heights above and issued from a huge rift or chasm some 100 yards on our right. This talus was about 150 ft. in height at the point it emerged. Immediately in front of us was a vertical cliff of the same height, with a very steeply sloping terrace along the top, evidently accessible from the talus. Upon this terrace were sundry detached crags and then came a second cliff about 150 ft. in height. It was in this cliff that the cavern containing the nest was situated, less than 60 ft. above the terrace. To reach it seemed absurdly

[1] See General View of Cliff at end of book.

simple for it was clearly possible to escalade the cliff immediately below it for some way.

My friends, as were our Spanish attendants, were enthusiastic and wanted to get to work at once. But I, taught by many bitter defeats, before committing myself to attempting to climb from below, reconnoitred with my glass to see if the nest could be reached from above. Sure enough there was a fairly defined ledge or terrace rather over 80 ft. above the Vulture's cavern, easily recognizable by an uptilted pinnacle rock about 4 ft. high which we elected to style the "petrified artichoke," from its similarity to that vegetable.

If we could only get to this spot, all would be well for us. But here came the rub, for above the "artichoke" were a series of low cliffs 20 to 40 ft. in height interspersed with steeply sloping narrow terraces, mounting one upon another like steps and gradually losing themselves in the heights over 500 ft. above us amid the drifting clouds which eddied about the crest of the mountain.

It was not an encouraging prospect; for an hour past we had been above the snowline and although the snow was of no depth save in the drifts, the cold was intense. Wherever the sun had thawed the snow on previous days, there was now a coating of ice; hence climbing was peculiarly dangerous.

We however decided to attempt in the first instance to reach the nest from below and, having shouldered our ropes, made our way painfully up the great talus. Arrived at the terrace, we sidled along it and after a tough scramble through the detached pinnacle rocks already alluded to found ourselves immediately below the nest.

And how easy it looked! Various fissures and joints, overgrown with tufts of mosses, saxafrage, heath and scrub made it possible at a point only a few yards to the right of the nest

to climb some 20 to 25 of the feet of the 50 to 60 which separated us from our much coveted objective.

Among my party I happily numbered my old ally, Admiral Arthur Farquhar, a good climber and, needless to say, with a thorough knowledge of ropes. Two of our Spaniards were ex-goatherds and reckoned as good climbers.

It did not require more than a glance to see that the Bearded Vultures had selected this seemingly low-placed cavern, simply because it was totally inaccessible from below and so I at once started off to see if it were possible to work round the left flank of the cliff (facing it) and gain the "artichoke." Meanwhile my companions, more especially the two ex-goatherds, indulged in fruitless gymnastic efforts about twenty feet up the cliff.

At first I made good way and, stopping for breath, was shortly joined by Farquhar who had remained behind to see what the goatherds could do. We worked our way amid smooth rocks and across steeply sloping grassy terraces, alike slippery with ice. It was most unpleasant and soon the soles of our *alpargatas*, which had got wet amid the rank herbage below the cliff, began to freeze! A rope-soled shoe frozen hard is about as nasty a thing to climb rocks with as can well be imagined. It soon became evident that although we could reach easily the same level as our "artichoke," we had against us the geological fact that the portion of the hill we were on, by reason of the trend of the strata, made it impossible to cross over to our desired point. For separating us from it was a series of low tiers of rocks and terraces which, whilst enabling us to work upwards, ever led us away from our point. Returning to our party below the nest we found them in the lowest depth of despair and half-frozen. It was not difficult to see that they had come to the conclusion that the nest was unassailable, so leaving them huddled round a fire

they had kindled, I started off alone on a forlorn hope to try to find a way to the top of the cliff.

Arrived at the point where the talus emerged from the chasm, I commenced a most painful and laborious ascent. At places the loose débris was on the run and it became necessary to escalade the face of the cliff on one side or the other of it, so as to avoid setting it in motion. I was further most terribly handicapped by my injuries which affected my heart to such an extent that I had constantly to lie down and gasp for breath. At last I found myself on a level grass patch close to the summit and over 500 ft. above our starting point. After a rest, I climbed over the brow and looked down towards where the nest lay. But owing to the general convexity of the slope of the hill it was impossible to see more than 20 or 30 yards in front.

It was bitterly cold, a piercing wind swept the sierra and the damp clouds scudded past below me, for I was nigh 4,400 ft. above sea-level. The rocks were at places coated in ice whilst half-frozen mud and water oozed from the interstices between, the whole being powdered with snow which lay thick in the gullies. All seemed so deterring and hopeless that I almost felt inclined to abandon the project but then I recalled how the nest must surely contain eggs and how I longed for some for my collection, not to speak of the photographs I would get! So I hardened my heart and crept cautiously down the slippery slopes holding on to rocks from time to time until I had descended over 70 ft. The crags now became much steeper and it was clear that under existing conditions of ice and snow it was foolish to go further without a life-line. Working cautiously upwards to my right flank I reached the edge of the precipice forming one side of the chasm up which I had scrambled and, looking over, saw the rest of my party on the talus 300 ft. below me. Hailing them I asked them to come up and bring the ropes, saying that I felt sure we

could reach the nest from where I was. Half an hour later they joined me bringing with them my three ropes, namely 100 ft. each of 2 in. and 1¾ in. and 75 ft. of 1½ in. Alpine rope. Time pressed and the cold was so intense that it was useless to think of attempting to join our ropes together by long-splicing them and so we decided to join them by knotting. I adjusted my canvas sling and, making myself fast to the 1½ in. rope, started away down the cliff.

The first portion of the descent was simple enough, usually down steep grass-grown gullies alternating with low cliffs of 20 to 30 ft. The general conformation of the mountain was of stratified limestone uptilted almost vertically and presenting the edge of the stratum to the face of the cliff. As a rule, it was easy enough, with the aid of a rope, to drop over these steep places, usually through some narrow gully choked with fractured rocks between the uptilted strata.

After descending about 120 ft. in this manner I came to a fairly safe terrace whence some 20 ft. below me I could see our land-mark, the "petrified artichoke." In a few minutes I was down alongside of it. Here I had a good look round and was surprised to note the great height I was at, for although now only some 350 ft. above our mules below, the valley we had ascended in the morning fell steeply to a small Moorish village nigh 2,000 ft. below and the view to my front was in consequence most extensive, despite the drifting clouds about the higher peaks. I now endeavoured to find a way round the cliff immediately below me and got down some 30 ft. or so to my left (facing the cliff) only to find the ledge I was on merged into the cliff. My climb was not a waste of time for it showed me that there was only one possible way to get at the nest and that was to go over the edge of a rather beetling crag a few feet to the left of the artichoke. So I retraced my way up to the ledge 20 ft. above it and there

found to my surprise Farquhar. He told me that having seen the last join (at about 160 ft.) through the hands of the lowering party, he had come down to bear a hand. I was very glad that he had done so for, in addition to having his moral support, he served as a very necessary connecting link between me and the lowering party and further was able to see how my ropes lay and give them a fair lead when they required it. Leaving him to tend the ropes over the last cliff I descended again to the "artichoke" and dropped over the edge. At first the rock, although nearly vertical, gave me some handhold, 30 ft. below was a very small rocky bluff with some herbage on it, upon reaching which I signalled "Hold hard" and looked over. What I saw was encouraging for about 100 ft. below me I espied the outer edge of the terrace whence we had vainly endeavoured to reach the nest from below, and I could even identify the spot opposite where we had striven to climb up. The cliff overhung a little and it was quite clear the nest was not more than 50 ft. immediately below me.

Leading my line over a smooth part of the rock and signalling "Lower-away," down I went. As I descended I grabbed at the rocks to steady myself, but they were covered with great masses of brilliant green saxifrage coated with half-melted snow which came away in my half-frozen hands like big sponges, whilst icicles hung from every projecting crag and added to my discomfort.

In all such descents the great art, when once the cragsman has decided on action and the die is cast, is to get over the awkward spots as soon as possible. I had impressed this on my party before starting down. I went down, my rope running out merrily, far too merrily to please me, owing to the want of skill of my lowering party, which was of course beyond the control of Farquhar at his precarious half way house. Suddenly the rope checked and I was brought up with a jerk that sent me swinging

out in a most objectionable manner. It was an awkward moment, as I was in mid-air and with only just enough touch of the cliff to stop myself from revolving. I quickly gave two blasts on my whistle; "Lower away" but got no response. Then I tried three blasts, "Haul-up" with as little effect. It was quite clear that something was wrong!

Only those who have gone through similar troublous times can appreciate what this means to a man who has got to look out for himself. The nearest approach I know to the feelings I then experienced is when things go amiss in a balloon and the question arises, what is to be done next?

It did not take long for me to realize that *the rope above me had jambed.* I looked down and the prospect was not cheering for I was hanging plumb over a peculiarly hard-looking mass of rock, some 70 ft. to 75 ft. below. I looked up to see if I could, as in former days, swarm up the rope to the top of the cliff and then remembered that my disabled left shoulder and other injuries effectually barred such a feat of gymnastics. So I waited and began to think it out. Suddenly, I felt a sharp jerk and I shot down for a few feet, swinging about helplessly. Whistle in mouth I sounded shrilly "Lower away" and away I went! Less than 15 ft. more lower down I suddenly found myself opposite the Bearded Vulture's cavern and clutching at the rocks drew myself in and felt my feet strike a soft substance. Next moment I was clinging to the nest. I looked in. *It was empty!*

What my feelings were, it is perfectly impossible for me to describe, as with difficulty I dragged myself in and took stock of my position. I was in a low cave about 5 ft. long, 2 ft. to 3 ft. high and 4 ft. in depth. The nest was a huge affair, built of big boughs, filling up the whole cavern, with a cup-shaped depression 24 in. across, lined with great lumps of black sheepswool, brown goatshair and fresh green mosses. Evidently the bird had not

yet laid and yet it was the last week in March and I knew well that they usually laid early in January! It required little skill to recognize that the nest was perfectly new and unused and that the old birds fully hoped to use it very soon. Also it had most assuredly not been robbed, for there were no traces of a former descent through the masses of saxifrage and numerous rock growing plants and shrubs I had passed on my way down. Anyway, there was nothing now to be done save to get out of the place as soon as I could, for I felt anxious about my lowering party up in the snows and bitter cold above me.

And now came a supreme moment. Was it possible for me to return the way I had come? Obviously the rope had jambed and jambed badly and if this had occurred when being lowered what might not happen when being hauled up? A bad jamb on such occasions may lead to a rope parting. It is entirely a question of the strength of those who are hauling on it. Looking down, I saw it was less than 60 ft. to the terrace below, and so I decided to go on. After a whistle to warn those above, I gave the two blasts and putting all my weight on the rope slid off the nest. Next moment I felt the rope "rendering" and down I went, now swinging in mid-air. All went well until I was within 15 ft. of the ledge below and then once again I was suddenly checked. In vain did I whistle "Lower away." Could the rope be jambed again? Looking up, I felt it could not be, since the knot next above me was over the cliff-edge and I knew well that my old comrade would see that the one above him was all clear. The rope now gave up for a few feet and once again stopped. It quickly dawned on me that there must be *no more rope!*

It was a time for quick decision, glancing down, I saw that I was within 10 or 12 ft. of the rocks below. I knew that there was 5 or 6 ft. to spare of the rope securing the sling over my shoulder, for I had overhauled it myself before making it fast. So hardening

my heart I unbent the portion round my shoulder and proceeded gingerly to ease up the two half hitches which secured it to the canvas sling in which I was suspended, paying out the line through the thimbles on the sling as I slipped downwards. Arrived at the last few inches, I found my feet were still over 6 ft. from the ground, but there was no help for it and I let all go and dropped, landing amid the rocks and scrub shaken and exhausted but unhurt. But all the same it was a very near calculation! I now whistled to "Haul up" and as I saw the free end of my $1\frac{1}{2}$-in. rope curling about as it went out of view high overhead, I congratulated myself on my escape from a most awkward position.

I subsequently heard that the lowering party who, by the way, had nearly perished of cold in their airy situation, were greatly alarmed at suddenly finding themselves hauling up a loose rope, since they had no idea of where I had got to and imagined untold horrors.

Before closing this painful story of failure and defeat I must explain when and where my rope jambed and how it came about that I was able to get out of my fix so well. After I left Farquhar on the terrace above the "artichoke" crag he had acted as fugleman, receiving my whistles and signalling on their purport to the lowering party perched high above him. As he paid out the rope after I disappeared from his view over the "artichoke" cliff, the knot joining the $1\frac{3}{4}$-in. and $1\frac{1}{2}$-in. rope passed him in due course. It was whilst he was "handing" me down the vertical cliff that the rope in running over the edge bit in deeply between the uptilted strata near the "artichoke" and the miserable knot jambed! At the moment I was rather over 60 ft. below this point and Farquhar was over 20 ft. above it. Luckily, realizing the grave danger, he at once came down the intervening cliff on the rope, hand-over-hand, and reaching the extreme edge managed somehow to lift the knot clear. This was the jerk I felt!

I will not say all I think of the episode beyond that I could wish my worst enemy no better diversion than to be in the predicament I was, with no trusty naval officer to get him out of it The person who invented the expression "between the devil and the deep sea" had obviously never been over a bad cliff on a rope that jambed.

From the terrace I made my way down to the mules and found the *arriero* had lit a huge fire of lentiscus bushes where I was very glad to dry my wet clothes and get into my boots. Half an hour later I was joined by the cliff-party and had to break to them the doleful news of my utter discomfiture.

Since everything pointed to the Bearded Vulture having the intention to lay in this nest before many days, I decided to revisit it about a fortnight later, by which time I reckoned that the eggs would surely be laid. I came to this conclusion against all my knowledge and experience of the nesting of the Bearded Vulture since it was already two if not three months after their usual time for laying. But I was tempted to set aside all previous records by the fact that the birds were without doubt building a new nest and that probably their first laying had been destroyed by some accident or had been taken from some other site. I had further an excellent precedent in the case of an Osprey's nest in which fresh eggs were laid in the month of May, at least two months after the usual time and probably for the same reason.

So it came about that 8 April found me once more at the head of a forlorn hope pushing through the mountains for the Vulture's cliff. This time we carried with us a coil of 300 ft. of 2-in. rope, for I had had enough of joining ropes. As I was determined to make absolutely certain this time before I embarked on the laborious task of escalading the cliff, on our arrival opposite to it, I sent the mules away and lay up with my telescope to watch the old birds. Soon, one and then the other came into view flying

high overhead, at times dipping down and flying past the cliff. At the end of an hour, one of them suddenly appeared carrying in its beak (*not* in its feet) a big black mass which looked like a portion of a black lamb and flew straight into a cliff about 100 yds. from the nest I had descended to. Turning my glass on the spot, I saw to my astonishment a second huge nest which I had not observed on my first visit, doubtless because all my energies were concentrated on the birds and the nest they were then building.

I instantly made up my mind that this new nest contained young and that on the occasion of our first visit I had gone to the wrong nest! So thought my companions and yet we had watched the birds flying in and out of the first nest and they had never shown any inclination to visit the second.

My suspicions were strengthened by watching the great bird standing on the edge of the nest and judging from her movements and attitude apparently engaged in feeding her young. Presently she entered the nest and disappeared from view. Sitting no doubt on her young, said we. Some minutes later she rose and thrust her head out of the cavern and we could see clearly the fierce eye and the brilliant colouring of head and throat. Then she took wing and sailed away.

Soon the other old bird returned and glided uneasily across the face of the cliff, evidently alarmed at our presence near its sanctuary.

There was no necessity to watch any longer for there was nothing more we could learn of the contents of the nest save by actual inspection.

And now as to the position of the new nest. It was in a small cavern apparently almost identical in size and shape with the first nest and in an almost exactly similar situation but apparently more accessible. From the point where the talus issued from the chasm ran two terraces, the first, the main terrace, was the one we

had traversed on our former visit, while the second, which was much smaller, in fact, a mere sloping ledge, inclined sharply upwards for about 60 ft. to a point about 30 ft. below the new nest which for convenience of reference I will call Nest No. 2. The cliff in which was the nest though small was overhung and clearly unscaleable from below.

About 130 ft. above the nest were some serrated tooth-like caps above a steeply sloping terrace and it was quite evident that it would be possible to be lowered from this spot, assuming it to be accessible. Here lay our difficulty, for above it was a big cliff another hundred feet in height at least and other cliffs again above that. To effect a descent from such a height would have meant hours of work and it was even doubtful whether the 300 ft. of rope we had with us would have been sufficient. Our hopes lay in being able to escalade the sheer cliff forming one side of the chasm and thus gain the tooth-like crags above the nest by a short cut. We therefore started up the big talus and when about 170 ft. up it, leaving the bed of the chasm, climbed the cliff on our right (the side farthest from the nest), until we gained a point on a level with the nest which was now not 40 yards from us.

I found by aneroid that it was about 260 ft. above our starting point and in consequence about 10 ft. higher than the first nest. Returning to the gloomy chasm, we scrambled up it for another hundred feet and then halted whilst I sent on our two ex-goat-herds to reconnoitre up the cliff and try to find a possible route. This they did admirably and soon we were assembled at a point 360 ft. up the cliff and (as I know by aneroid) only about 100 ft. above the nest.

But we were in a most awkward and dangerous position; I have already described the up-tilted strata forming the mountain at this point. We now found ourselves standing on fractured and worn rocks sloping at an angle of 45 degrees to the edge of

the Vulture's cliff below us. On one side of us lay about 100 feet of precipitous crags which we had escaladed by using the stratified ledges as steps, whilst on the other a wall of rock barred our further progress.

Between the strata was moist earth and a profusion of herbage, mixed with loose slabs of rock broken from the main stratum by the action of the sun and frost. Amongst these we managed to find a footing and, securing myself in a bowline, I crept cautiously to the edge of the cliff to the music of the clattering of the loose soil and rocks which became detached as I did so. Peering over the edge I saw a small shelf not 40 ft. below me with an olive tree growing on its extreme point. This tree I knew to be exactly over the nest and I also knew that the rock it grew on was an overhanging one. To the left of the tree (facing the cliff) was a convenient grass-grown gully, sloping steeply, with serrated rocks cropping out in parallel lines. This offered the safest line of descent and a possible means of getting round the over-hanging rock.

Returning to my comrades, I gave out the "special idea." As the place was peculiarly dangerous, I decided to use two ropes. So making fast the centre of our 300 ft. coil to a convenient crag and throwing the end of the spare coil over the cliff I adjusted my sling and rope and dropped over the edge. Hardly had I done so, when portions of the surface of the rock above me began to crumble and move! I was prepared for this and with the aid of the life-line was quickly hauled back and proceeded to dislodge the loose rocks. A regular avalanche of rock and rich black earth resulted. When all seemed clear, I was lowered foot by foot, clearing away all loose rocks as I proceeded. To guard in a small way against falling stones, I had filled my sombrero with short heather branches before starting and it was lucky I did so for from time to time the rope detached small fragments of rocks from above.

But I was now met by another trouble, the rope as my weight got on it cut its way deeply into the narrow fissures between the strata and not only loosened more stones but threatened to jamb. At last I reached the edge of my sloping gully, it was only 60 ft. from my party above but every foot had been a source of anxiety to all of us.

The cliff now became vertical and I went over and soon found myself on a level with the big nest and some 10 ft. to the left of it. It was impossible to get nearer as I was wholly dependent on the rope. Above the nest was the overhanging rock and there seemed just a possibility of my being able to swing in under it, if I could get my life line led from directly above. Accordingly I was hauled up once again and made my way to the olive tree. Hauling up my life-line I rove it over the bole of the tree and dropped it down the cliff. Then catching hold of it, I signalled "Lower away" and went down as before with my weight on the rope on my body but keeping a strain on the line over the olive tree. By this means I gradually hauled myself in towards the nest and succeeded in grabbing a projecting rock at the entrance to the cavern and swinging myself in. Judge my astonishment, disappointment and dismay at once again finding the nest *empty!*

It was exactly the same as the first nest, a huge mass of sticks with a deep soft lining of lambswool and goatshair. A big lump of black lambswool lay in the middle of it, the mysterious article which I had seen from afar the Vulture carry to its nest.

Why these birds thus repaired and re-lined a second nest at this season I shall never know, for I could not pay them another visit. One would have imagined that my cup of bitterness and disappointment was about filled but such was not to be. At least I would take a photograph of the cavern and the immense nest. To do so, I wanted more rope to enable me to crawl in and get to a favourable point and so signalled up to "Lower away" but

got no response. Repeated whistles had no effect and I heard indistinct shouts in reply, so knew that something was wrong and that once again the rope was jambed. Was there to be no end to my ill-luck?

Suddenly I bethought me that probably in hauling myself towards the nest on the life-line I had given the lowering line a "foul lead" through one of the narrow fissures between the vertical strata and had thus jambed it. So it was. Therefore, giving a shrill blast "Hold hard," I eased up the life-line and swung back on the other rope and as it took my full weight I felt it give up and I knew that it had cleared itself. Looking down I saw my life-line was touching the ledge about 30 ft. below and so I signalled "lower" and after doing tee-totum for a few yards, due to the overhanging cliff, landed upon the ledge in safety. Thence I made my way down to the talus and on to the mules below, where we all foregathered with as much fortitude as we could command.

Happily our troubles and exertions on this day were to a great extent forgotten owing to other matters of absorbing interest. One of the greatest attractions in the quest of wild birds in their haunts, especially in a wild country such as Spain, are the innumerable possible compensations which from time to time may serve to assuage one's wounded feelings and cause one to forget the disappointment of a failure such as I have just described.

It was on the return journey from the second fruitless expedition to the Bearded Vulture's cliff that I had the great good fortune to witness an exhibition of the ways and habits of that bird which falls to the lot of few.

Most people who have read about birds are well aware that this species is credited with the habit of carrying the larger bones of defunct animals high into the air and dropping them on some rock in order to smash them and thus get at the marrow. Hence

the bird has acquired the name in Spain of *Quebranta-huesos*, "bone-smasher" (from *huesos*, a bone, and *quebrar*, to break). So familiar is this habit to all those who live in the countries where the bird is found that I had not intended to inflict my experiences of the same on the readers of this book, since for years it has been to me a matter of certainty that the Bearded Vulture broke bones by dropping them from a height.

Despite the fact that this curious habit has been accepted by many successive writers, in one of the most recent books on ornithology, published in 1907 ("The Fauna of South Africa," vol. iv., by W. L. Sclater and A. C. Stark[1]) I was surprised to see that this habit of bone-breaking is referred to as only a reputed one. But this was not all, in Allan Hume's admirable Notes on Indian Birds, it is described how the Bearded Vulture had been seen to carry up bones to a height and drop them but that there was no positive proof that this was done of a set purpose, since the reporters of the occurrence had not seen the bird complete the operation by descending to make a meal off the fractured bone. I make not the smallest doubt but this habit of the Bearded Vulture has been described by others far more competent than myself, but as such records are apparently not generally accessible (in fact I can find none in any library), I venture now to describe what I actually saw on this eighth day of April 1906.

I may explain that in southern Spain the name of *Quebranta-huesos* is known far and wide to all dwellers in the sierras but that in the very extensive districts where the Bearded Vulture is rarely if ever seen, the name is applied to its small relative the Egyptian Vulture or Neophron. The Neophron however has never been supposed to break bones, after the manner of the Bearded Vulture

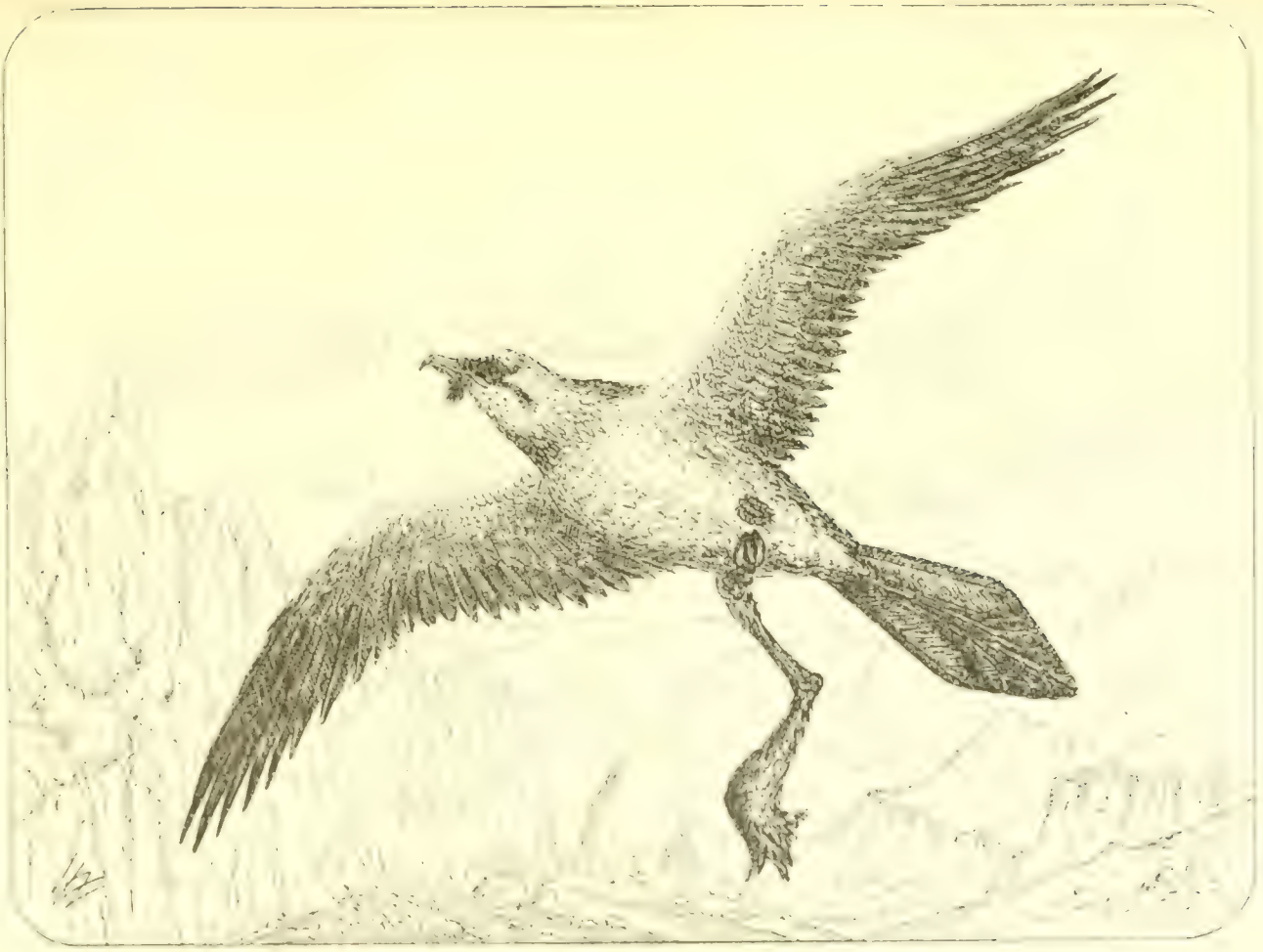
[1] Dr. Stark was killed by a Boer shell during the siege of Ladysmith.

Repeatedly during my wanderings have I had pointed out to me by goatherds and others, *sitos*, places whither the *Quebranta-huesos* resorted, to carry out his time-honoured practice of bone-smashing and now and again on visiting such spots have I come across the dried up and putrid limb of a goat or sheep. But hitherto I had never actually witnessed the methods adopted by the birds.

Now as to our experiences; we had sent our mules towards home down the steep valley which we had followed in our outward voyage in the morning and had taken a line along a great bluff surmounted by high cliffs on the chance of coming across something of interest. From time to time we sighted Bearded Vultures high overhead, six times single birds, and twice a pair, probably from the nest we had visited.

Presently we saw a single bird sailing around perhaps 2,000 ft. above, carrying some long object, considerably longer than the long cuneate-tail of the bird. With the telescope I made this out to be the hind-limb of some large animal. The bird was clutching it with its *right* foot just below the fetlock and after watching it circling aloft for some minutes, I dropped my glass and made a pencil sketch of what I saw, from which the drawing here given is copied.

Hardly had I completed this when the bird let the object go. I was accompanied by the late Mr. Edward Hunt, the Chief Engineer of the Algeciras-Bobadilla Railway, and we watched the object whirling down for certainly 1,500 ft. until it struck an horizontal terrace of limestone rock below us. The sharp crash it made was distinctly audible from our post, some quarter-mile distant and perhaps 200 ft. above the spot where it struck. Almost immediately, the Bearded Vulture dived downwards and after one or two descending sweeps alighted close to the object. With my telescope I watched it pull the limb about for a few minutes and



QUEBRANTA-HUESOS, "THE BONE-BREAKER" AT WORK.

(From a sketch made a few seconds before the limb was let fall.)

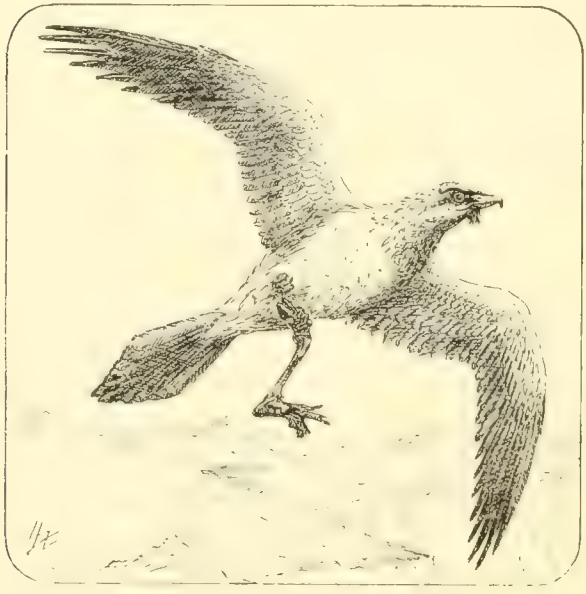
feed off it. Then it seized it, this time with its *left* foot, again just below the fetlock and took wing. It was at once noticeable that the limb was much shorter than before, as if the femur had been torn from off it. I made a second sketch of the bird as it soared aloft above us, which appears at the end of this chapter.

Soon it lowered its flight and alighted on a crag a few hundred yards from us where it set to work to pick at the limb. After a time it took wing again this time without the limb but in place of flying upwards it swept down into a valley about 300 ft. below the bone-breaking terrace and alighted. With my glass I watched it walk a few yards up to the carcass of a calf and commence to tear at it. Soon it was joined by an adult Neophron, the vast dissimilarity in size between the two birds being most noticeable.

The Neophron did not seem to be alarmed at the presence of its big relative and between times got in a good many tugs and mouthfuls of sorts. After a time the Vulture took wing and sailed off leaving the Neophron in possession. From the terrace we were working along it was a precipitous descent to the bone-breaking plateau and to reach it meant retracing our steps for a mile or more, so I reluctantly left the spot without visiting it. A goatherd with us assured us that it was one of the favourite places for the birds to drop bones and I have no doubt he was right.

The sharp splintering crack made by the impact of the bone on the rock is an unmistakable sound and I can recall instances before the occurrences narrated when I have heard it when climbing in the sierra frequented by Bearded Vultures and the men with me have asserted the cause, which I at the time disbelieved. Since then I have heard it two or three times but never before or since have I thus witnessed the three phases of carrying the bone aloft, dropping it and descending to feed on it.

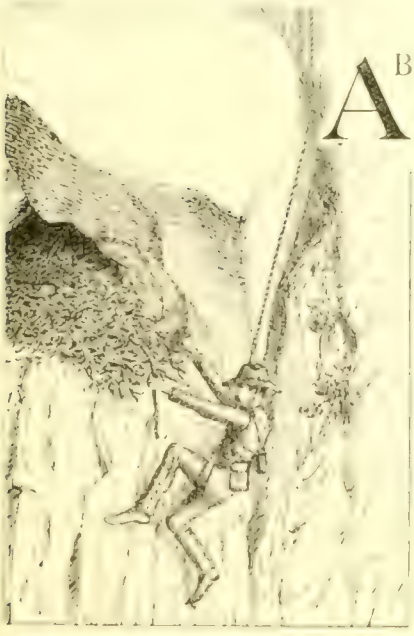
In nests I have visited I have found fragments of the limbs of sheep, goats, cows, donkeys and other animals with the fractured and splintered bones of the tibia or femur projecting from the dried hide covering the lower portion. By no other means save by a fall could these heavy bones have been thus broken open, for powerful as is the beak of the Bearded Vulture, it is not strong enough to shatter such bones.



CHAPTER X.

THE BEARDED VULTURE (*continued*).

Third Expedition—Defeated by bad weather—Fourth expedition—Watch bird on nest—Fierce appearance—Ascend cliff and am lowered—An agony of hopes and fears—Reach the nest—A young Bearded Vulture—Description of cavern and nest—A Bearded Vulture's larder—Photographing young bird—A cramped situation—The attack on the camera—Leave the young bird and descend—Timid behaviour of parent birds—Fifth expedition—A marvellous panorama—A reduced lowering party—A false lower—Re-ascend—A depressing moment—"Now or never"—Am again lowered—Reach the nest—At last!—A horribly nasty cavern—An awkward descent—Defective cartridge-films—A Consolation prize.



ABOUT the first week in February in the year following I once again organized an expedition to visit the Bearded Vultures in their home.

The previous day to our start had been fine but low detached clouds were scudding past the mountain tops and there were other signs of approaching wild weather. At daylight heavy drifting clouds covered all the upper portion of the sierra. Had I been free to do so, I would have put off the expedition

but my friends, upon whom I depended entirely to handle the ropes, had only limited leave of absence and so, strongly against my better judgment, we set out When less than 1,000 ft. above the sea we entered the clouds and the rain came on and persisted for three days and three nights. We got within half-a-days ride of our cliff but it was absolutely out of the question to proceed further amid the precipices and we had perforce to retire discomfited. Our return through the mountains was not without adventure since the burns were all in full flood.

Despite this third repulse, I was still sanguine of success, for I reasoned that nobody else would be likely to get at the nest and that if I but gave the birds sufficient time before returning to the attack they would have hatched out their young and I would be rewarded by being able at any rate to photograph the young Bearded Vulture in its nest. It savours somewhat of counting one's chickens prematurely, but from what I had seen of the Vultures the preceding year and from what I knew of their habits when unmolested, I felt sure that they would again nest in the same cliff this year. I had reckoned on re-visiting the spot in about four weeks but owing to wild weather in the sierras it was close on seven before I once again found myself within striking distance of the great cliff.

It was on a fine but cold morning very early in April that we rode out from our halting place of the previous night and proceeded to work our way up the mountain. After some hours we arrived at our old point immediately below the nest. The cold was intense and we lit a huge bonfire of scrub and heath to warm ourselves whilst we watched the cliffs. It was whilst thus employed that a Bearded Vulture came sailing over us quite low down anxiously turning its head towards the cliff and on us alternately as it passed. I now felt confident that the nest must be occupied. Nor was I

mistaken, for shortly afterwards, a Bearded Vulture's head appeared peering at us over the edge of the great nest, which for convenience sake, I have styled "No. 2" in the preceding chapter. With the telescope it was as easy to see the bird as if close at hand. Surely no bird ever looked so savage with its cruel pale orange eye encircled with crimson fixed on us. The jet black "eyebrows" and "moustache" (it is sadly unscientific but exactly expresses the general appearance) as well as the shaggy black beard, seem alike designed to give the bird an aspect of malevolence and ferocity, which certainly are not merited. Appearances are assuredly against a Bearded Vulture for despite this seemingly ferocious demeanour it exhibits far greater confidence in man than do Griffons, as is shown by its choice of nesting places at times near human dwellings. On the other hand, notwithstanding all tales to the contrary, the Bearded Vulture is vastly more alarmed than is the Gritton when its nest is approached and simply takes wing and flies away, regardless of the fate of its offspring, in this trait much resembling its smaller relative the Neophron. The following account of my experiences at the nest, which may be taken as a typical instance, will, I think afford proof of this.

Having watched us intently for a time, the old bird lowered her head and was lost to view. I was now certain the nest contained young and we made our preparations accordingly. We ascended the talus as before and on reaching the point whence it emerged from the chasm I escaladed the cliff on the far side of it, until nearly on a level with the nest and took the photograph of the crag which is here reproduced. It was whilst thus engaged that the old bird, hearing the clatter of our feet on the loose stones, once again put out her head. This time she was within shot of us and we all had another opportunity of admiring her splendid colouring. Her baleful look as she took wing was a thing to remember.

In this picture the exact position of this nest is indicated by the arrows. Immediately below it and rather below the centre of the picture is a small terrace on which were some sticks and débris fallen from the big nest above. From this terrace runs the ledge by which I eventually made my escape on the occasion of my visit of the preceding year. As will be noted, it becomes rather awkward to work along as it nears the right edge of the picture and so I dropped down to the ledge below it which joins the talus a few feet beyond the right bottom corner.[1] A close inspection will enable the olive tree to be identified, which forms such an important connecting link in the task of reaching this nest. It lies near the top of the picture just below the top arrow. Nest No. 1 is not visible in this picture, being hidden by the great natural bastion or buttress of limestone which occupies the centre of it.

It was exciting work escalading the cliff abutting on the talus; at places the limestone had become riven and loosened and caused some anxiety for those climbing below us. We soon found ourselves on the same steeply shelving terrace as the year before and proceeded to carry out the same plan for the descent. Securing the centre of my 300 feet of rope to a crag, I once again laid one portion down to the olive tree. Warned by the previous year's experiences I was extra careful in seeing to the "lead" of my own rope and to the dislodging of loose rocks and stones, and fortunate was it that I did so, for we found the whole ledge of the cliff in a state of disintegration, more so than the year before owing to the recent heavy rains. Finally, I cleared a reasonably safe passage and was lowered down to the olive tree; here I led my life-line as before round it and, easing it, got my weight on the lowering-line and gave the fateful signal. As I dropped over the edge and scraped down along the slippery and wet surface of the cliff, I

[1] See also General View of Cliff at end of book.

THE BEARDED VULTURE'S CLIFF

Nest No. 2.

(The arrows indicate exact [illegible])

confess to experiencing a perfect agony of hopes and fears. *Was* the nest tenanted or not? Arrived at the overhanging crag I hauled myself inwards and as I came opposite the nest looked in and *saw nothing in it!*

It was the same huge structure of sticks as of the previous year amply lined with richly coloured brown sheep's wool and goat-hair. Next instant I detected not four feet from me and flattened down amid the brown wool a big young bird of colour identical with the nest, squatting motionless with head and beak resting on the thick masses of wool in front of it.

The revulsion was indescribable! Swinging myself into the nest, I signalled for more rope and crawled into the cavern, which was an awkward cramped place, as will be seen.

Although at the entrance the cavern was six feet high, the roof shelved downwards until at the back it was not two feet above the nest. The total depth of it was about 4 feet and the width 6 feet. Crouching low in the inner corner of the cavern so as to avoid the risk of slipping out, I proceeded to examine the place. The nest measured almost exactly four feet in diameter with a bowl in the inner side, 18 inches across. The young Vulture was about the size of a tame duck and was covered with a thick close down, pale umber brown in colour, save on the head, where it approached to a vandyke-brown. The primary feathers and tail were just emerging from their quills and were very dark brown and about half-an-inch in length, whilst on the scapular tracts two bars of shorter dark feathers were showing. The irides were of a dull pale brown, the beak and feet horn coloured. I had expected to see a bird with a quick eye, but it was exactly the reverse, the dulness and lack lustre of it being quite remarkable. All the time I watched it, it kept up a continuous and rapid blinking which augured ill for photography.

But what impressed me most were the to me entirely novel

surroundings of the young bird. Besides the mass of sticks, small boughs and branches of dried heath which formed the nest there were several short fragments of old rope and a perfect Golgotha of remains of animals. Within six inches of the beak of the bird was a calf's foot severed above the fetlock and hard by it a donkey's foot and fetlock joint whilst all around were many portions of the legs of sheep and goats of various lengths. The whole external nest was littered with the horny sheathings of goats' and sheeps' feet, many of considerable antiquity. One limb of a big goat was particularly interesting as showing the manners and customs of these birds. It was a portion of a hind leg with hoof intact and with the femur broken and splintered about half way up. The skin had been neatly turned back below the hock and the bone picked clean. Curiously there was no appreciable smell in the nest, the gruesome remains being either quite fresh, as in the case of the donkey's foot, or dried up.

Having thus satisfied my curiosity to the full and made notes of all I saw, I set to work to photograph the place. Here I was met by an unexpected difficulty for, setting aside the short distance available, the roof was so low that I could with difficulty look into the finder. Also, wherever I crouched, either my feet or knees obtruded themselves into the picture! I soon realized that it was only possible to photograph the nest and young bird from one side, namely, where I was doubled up. By good fortune in one corner of the cavern there was a small fissure leading into the heart of the rock and by means of squeezing my feet into this and otherwise packing myself into the smallest possible space, I was able to get my camera to work.

I have had many curious experiences in photographing birds' nests but this was one of the most perplexing of the many awkward situations I have ever been in. On my right, between me and the edge of the cliff, was a sloping shelf of rock from the very back of

which I could get barely 3 ft. distance from the bird. The camera I had was the old Kodak No. 3 of which the smallest aperture was equivalent to F. 32. After endless trouble I managed to prop the camera rigidly on the ledge. But every attempt to look into the finder was frustrated by some particularly hard projecting rocks against which I knocked my head in vain. So I had to content myself with laying my camera on the object by rule of thumb and,

YOUNG BEARDED VULTURE.
Photograph taken with magnifier at 24 in.

pressing the lever, gave a 40 seconds exposure. The whole thing seemed so hopeless and uncertain that I decided not to risk wasting any more films in this manner.

Before setting to work with the magnifiers I turned the camera slightly so as to take in the front part of the nest and the profile of the face of the cliff on the far side of the cavern. It was well that I did so, for on my return to England I was enabled to join these

two photographs with a third (of which hereafter) and re-touch the joins with the result as seen in the full-page illustration given. I may mention here that this is the only made up picture in this book and I trust that the peculiar circumstances may be considered to justify such a proceeding. If the result is somewhat inartistic, I can only plead its absolute reality and that it most faithfully represents what I saw when huddled up in the cavern.

YOUNG BEARDED VULTURE.
From photograph taken with magnifier at 18 *in. distance.*

I now determined to take some portraits of the bird itself at more convenient range, so adjusting my 24 in. magnifier, I propped the camera on the rock at that distance from its beak and set to work.

Of the three photographs taken at this distance two were

fairly successful. In every case I aimed at 35 to 40 seconds exposure. Once the camera slipped off its precarious stand on the sloping ledge and the film was wasted.

I then replaced the 24-in. magnifier by the 18-in. one and gently pushed the camera 6 in. nearer. The first attempt was so far successful that I induced my subject to remain quiet for 35 seconds and with the result shown.

A second attempt was not so happy, for after twenty seconds I had quickly to close the shutter as the bird got restless and, rising up, settled down so as to present me with only a stern view.

I now made a mistake and endeavoured to turn my recalcitrant sitter round. It at once rose in its wrath and gave vent to a twittering cry very much like an infant Grifton. I was preparing for the worst when to my great relief it subsided, eyeing me distrustfully. Once again I got the camera to work but as I pressed the lever it rose and lurching forward to within a foot of the lens, subsided again, glaring at it ferociously. I kept the film exposed although the bird was obviously out of focus, but in about twenty-five seconds its patience gave out and it made a determined attempt to grab at the objectionable camera to his front, so I closed the shutter. The result, as may be expected, was not very successful but in the peculiar circumstances it has been given.

I subsequently reverted to the 24-in. magnifier and took three more pictures, in two of which the bird, now thoroughly upset, moved badly. The third was successful and, further, gave me a good view of the roof of the cavern which, as matters turned out, was extremely useful to me when subsequently engaged in compiling the larger picture of the nest.

It was now nearly half-past one o'clock and I had been cramped up in the cavern for over eighty minutes. I had now to decide on the fate of the young bird which I would have much liked to take back to my aviaries in England. It was of the age when

danger of cramp may be fairly discounted since its quills were sprouting well. But then I remembered how I still lacked the egg of the Bearded Vulture for my collection, the only egg of all the great raptores which regularly inhabit Spain that I had not taken with mine own hands, and so I decided to leave the young bird unmolested in the hope that by doing so its parents might be induced to nest again in the same cliff next year.

YOUNG BEARDED VULTURE ATTACKS CAMERA.
From photograph with magnifier at 12 *in. distance.*

So I packed up my traps and, after signalling to my long-suffering and half-frozen friends above, took the strain on the rope and dropped on the ledge 30 ft. below, landing on the extreme outside edge of it. Previous to quitting the nest I had thrown out

a few of the limbs of goats, &c., to show to my comrades, but most of these had rebounded from the shelf they struck on and gone down 150 ft. or more, a good proof of the vertical and overhanging nature of the cliff, for the ledge under the nest is fairly wide.

During the whole of the time that we were engaged in the climb (some two and a half hours) neither of the old Bearded Vultures came near the nest, a marked difference from the conduct of Griffons in such circumstances. Soon after we rejoined our mules, one of the old birds returned and re-entered the nest. As I was anxious to get a snap-shot of her leaving, I climbed up once again to the point whence I had photographed the cliff in the morning. As I did so, she quietly slipped off before I could get my camera into action. I then concealed myself for an hour in a cavern hard by, waiting for her return, but she was not to be deceived and I eventually rejoined my comrades.

As we made our way down the mountain, both old birds were seen soaring over the cliff and were later on joined by a third bird. On our homeward road we saw another pair of Bearded Vultures, one of which was carrying the limb of some animal in its left foot. Thus ended our campaign of 1907.

During the first week in January 1908 I made all preparations for a renewed attack upon the stronghold of the Bearded Vultures, but was delayed for over six weeks, first by continual bad weather and then by the difficulty of finding safe men to form a lowering party for what I now had good reason to know was a peculiarly dangerous cliff. At last I arranged for one under the guidance of Lieutenant Gerald Hamond R.N. a son of a former comrade, the late Commander Robert Hamond who had been my companion in many of the birdsnesting expeditions near Gibraltar thirty years previously, described in the earlier chapters of this book. Favoured by splendid weather, we at length found ourselves on 16 February immediately below the famous cliff. Sure enough

the birds were nesting not far off, for soon we saw one of them on the wing and it was tolerably certain that its mate was sitting. A careful inspection of the two nests with a telescope showed that No. 1, the first we had visited in 1906, was in occupation whereas No. 2, that of 1907, was obviously in a state of disrepair and untenanted. After firing several pistol shots, in the hope of causing the old bird, if in the nest, to show herself, I sent one of my party up to the terrace 200 ft. above us. It was not until he had twice fired my pistol close under the nest and not 20 yards from it that our suspense was relieved by seeing the old bird suddenly raise her head and look out. Eventually she left the nest and gave us a splendid view of her as she swept overhead in the brilliant sunshine. We lost no time in ascending the talus and steep chasm and on reaching the summit 550 ft. above the spot where our mules were picketed halted to recover our wind. It was one of those peculiarly glorious days of early spring in southern Spain and the view from our position was magnificent, causing us to pause for some time before setting to work. So clear was the atmosphere that we could distinguish the gleaming waters of the Atlantic near Cape Trafalgar over 50 miles distant whilst northward the great plains of the Guadalete and Guadalquivir, dotted with white towns here and there, extended like another ocean, some 4,000 ft. below us.

We now left the summit and worked our way carefully down the steep slippery slopes towards the edge of the big cliff. During this operation one of my party (not a sailor) found the height more trying than he had expected and we left him behind. This was truly unfortunate as it materially weakened the man-power upon which my calculations were based. The old adage that misfortunes never come singly was well borne out in the subsequent operations. Amid the wild desolation of jagged crags and steep slippery slopes which were wreathed in snow when I had visited

YOUNG BEARDED VULTURE IN NEST

the spot two years before, I could not precisely identify the point where I had then posted my lowering party. So selecting what seemed to be the lowest suitable spot, I donned my canvas sling and started away down the cliff. Very soon after I had posted my reduced lowering party and dropped down some 50 ft., I discovered I was losing my direction and inclining too much to the left (facing the cliff). Whilst engaged in altering the lead of my rope to the right so as to recover my proper line, a warning cry from above caused me to look upwards. It was lucky I did so, for my rope was bearing against a big perched rock balanced on the edge of a crag some 30 ft. exactly above me. My Spanish assistant, an ex-goatherd and daring cragsman, who had been with me on divers occasions, now descended cautiously and after I had moved back a few yards, toppled the rock over clear of me and it went thundering down for hundreds of feet. Relieved from this unexpected peril, I continued my descent until I reached the grassy ledge immediately above the famous "artichoke" described in the last chapter.

And now I made one of those unfortunate mistakes which, like so many mistakes in life, seem at their inception to be so trivial and yet lead to very awkward results. In the interval which had elapsed since I was last in this part of the cliff I had made many other descents and I was rather uncertain of the exact line I had then taken to get at the nest. Also, I had lively recollections of the difficulties and dangers of the descent in 1906 upon the occasion when the rope jambed and so was anxious if possible to find a new and easier way down. So I signalled to the muleteer, nigh 400 ft. below, to ask the exact position of the nest, and he waved to me to move to the right (facing the cliff) of the "artichoke." This was reassuring, for here I saw a grassy gully which, although nearly vertical and obviously slippery, looked infinitely more inviting than did the projecting rocks immediately below me of which I had such a disagreeable remembrance.

So I slipped into the gully and signalled "Lower away" and down I went for over 80 ft., making futile grabs at loose rocks, masses of saxifrage and plants, all of which came away in my hands together with a shower of stones and soft black soil. Suddenly I found myself scraping past a big projecting mass of rock and I knew I must be close upon the nest. The whistle was in my mouth (as it ever is in critical times) and I sounded on it shrilly "Hold hard" and was brought up with a jerk, swinging clear of the cliff and exactly opposite the extreme right lower corner of the great nest. I was too far down to see into it. A push with my foot caused me to swing outwards and as I swung back and inwards I grabbed at the cliff and by good fortune secured a fair handhold. All I now required was a little more rope to permit of my hauling myself into the nest. So I whistled for more rope but got no response. Knowing well that it was simply a matter of time for my strength to become exhausted, I now strove to secure myself to the nest by the end of my rope. But no suitable point was to be found and all my attempts at getting a sound handhold amid the big sticks forming the foundations of the nest resulted in my simply pulling them out and causing that part of the structure to slide! A sketch of my unenviable situation at this instant is given at the beginning of the chapter. Meanwhile my vigorous signals for more rope were ignored and I came to the unpleasant conclusion that I must have reached the end of my rope! Looking down I could see the terrace only 50 ft. below me. If I could descend to it, I might, by altering the lead of my rope to the left, re-ascend on the proper line and enter the nest at its left side. Anything was preferable to attempting to re-ascend that detestable gully with its attendant loose rocks and mud bath. So I whistled again and again but in vain. Without doubt I must be at the end of my tether! Slowly but surely I felt my handhold relaxing and finally I lost my grip and, as I did so, swung outwards with a horrid

jerk. There was nothing for it, but to try to re-ascend. To my surprise my signal "Haul up" was at once responded to. But, bad as the descent had been the ascent was vastly more unpleasant. Handhold there was none and all efforts on my part to "lighten up" resulted in my detaching a fresh avalanche of stones and débris of all sorts. Up I went, spasmodically and painfully; at times the rope bit deep into soft black soil in the crannies between the vertical strata. When at length I reached the top of the gully, I saw to my surprise my goatherd tending the rope at the exact spot where Admiral Farquhar had joined me two years before. It was some little time before I could recover my breath sufficiently to discuss matters and, when I did so, he explained that he had climbed down, since my signals were not understood and they feared I might be in serious trouble. Glad as I was to see him, I felt some misgivings when I recalled how the lowering party was now reduced to Hamond and one other. But I could not but admire the pluck of my goatherd who, true to the traditions of his class, thoroughly mistrusting all ropes, had without touching mine actually climbed down the successive low cliffs above me by means of slippery grass-grown gullies to the perilous point he now occupied. What this meant can in some degree be imagined from the sketch at the end of the book.

The upward struggle had told severely on me and for one brief moment the thought arose: was it worth it? My recent experience of being hauled up by two men was distinctly discouraging and the prospects of another such descent and a similar return journey were enough to deter anybody save and except one of the birdsnesting guild inebriated with the exuberance of his calling. My intrepid assistant craned his neck over the abyss and muttered "*Hafi*" he was a man of few words and I knew well what that word conveyed when he used it and was not greatly encouraged thereby. I fancied I detected in his impassive face a lurking contentment

that he had at last "seen me through," as the expression has it. The idea was intolerable. I asked myself what prevented my going on and the reply came quick. "This: if the rope is not long enough to take you to the terrace below, you probably won't be able to come up again with only two men to haul on you." It must be remembered that at this time I was by no means certain that my lowering party was posted as far down the cliff as in 1906, hence my natural anxiety as to the length of my rope. Also, my recent experiences when on a level with the nest pointed to the rope being too short. The situation was maddening for I realized clearly that in all probability it was a case of now or never, so far as my taking the egg of the Bearded Vulture was concerned. Then came the remembrance of the long series of failures which had attended all my efforts to get this egg, extending now well over thirty years. And then I recalled how only a quarter of an hour before I had actually had my hand on the coveted nest. My assistant had thoughtfully brought down with him a 100 ft. coil of light Alpine Club rope, this would at any rate take some of the strain off the lowering party. So making it fast to a convenient crag I heaved the coil into space with a fervent hope that it might prove long enough to aid me in my descent and, if required, in my subsequent ascent. Taking a firm hold of the light rope I was lowered 20 ft. to the little green ledge alongside the "artichoke" whence I had a good view of the work before me. Immediately below me the cliff descended sharply for some 30 ft. or more to the rounded rocky bluff which marked where it became vertical and in places overhanging. My Alpine rope lay truly down the cliff and disappeared from view over the bluff and I knew the nest was no great distance below that point. The sight inspired me with fresh determination and I gave the signal to lower and slithered away at speed. The die was cast and soon I was scraping over the rocky bluff and

next moment was hanging just clear of the cliff. Fifty feet or so more brought me opposite to the cavern at the same point as in 1906. Checking my descent by means of the Alpine rope, I whistled "Hold hard" and was thankful when I felt the rope tauten. I brought up with the roof of the cavern about level with my chin. As I lowered my head and peered into the nest, I saw this time that it contained a big egg, richly marked with shades of yellow and brown. *At last !*

My troubles were not yet over for it was with the greatest difficulty that I could induce my friends above to give me a little slack rope to enable me to enter the cavern. Also the roof was so low and the floor so shelving that it required much contortion to crawl in and, having crawled in, to avoid slipping out. Having made my position secure, I proceeded to examine the place. The nest was identical with those of 1906 and 1907 so far as regards materials, construction and size, but whereas all these had been scrupulously clean, not excepting the one with the young bird, the one I now occupied was in a horribly filthy state. In fact I never saw—or smelt—a nastier one and I was forcibly reminded of Dr. Stark's description of this splendid bird: "In food, nest and nesting place, it is simply a big Neophron." However, notwithstanding dirt and evil smells, there was the egg I had come forth to seek and to photograph. I now spied a second egg lying at the back of the nest against the wall of the cavern, broken into two large and several smaller portions. These I piously collected on the off-chance of my being able to piece them together.

The work of photographing this nest was peculiarly trying and difficult, for the available space and head room were much less than in the nest of the previous year; 2½ ft. was the greatest distance I could work at and then I could not use the finder of the camera. In order to guard, as I fondly hoped, against all possibility of failure, I had brought with me two cameras and with these I

proceeded to take an exhaustive series of views of egg and nest at $2\frac{1}{2}$, 2 and $1\frac{1}{2}$ ft. distance.

I now had to decide upon my line of retreat. The extreme end of the Alpine rope dangled just level with the nest, showing that I was almost exactly 100 ft. below my assistant and I reckoned he was about 150 ft. below Hamond (as it turned out he was somewhat less). As my 2-inch rope measured 300 ft., I calculated I could count on about 50 ft. to take me downward and the friendly terrace below me was certainly not more than 60 ft. Anyway it was worth a trial. So I cautiously unbent the rope which encircled me and was secured to the canvas sling and made it fast to the thimbles on the sling at its extreme point so as to utilize all the rope I could. By this means, including the slack I had coiled down in the nest, I gained some 10 to 12 ft. Grasping the rope firmly, I signalled "Stand-by" and as I felt it tauten I slid out of the nest and in a moment of sheer thoughtlessness, begot of my success, sounded "Lower away." The instant the rope began to run out, I realized I had made a serious error for I was descending at speed with my whole weight on my hands or rather on my one sound arm. There was no time for thought, still less for any signalling and I did the only possible thing, namely quickly lowered myself hand over hand until I felt the sling take the weight of my body, as it should have done in the first instance. Thus occupied I was naturally unable to steady myself or minimize the gyration of the rope and I rattled down, now banging one camera now the other and now the box containing the precious egg, as well as my knees and elbows against the cliff until I landed with a bump on the rocks below, all well but somewhat shattered. My left arm for a time was quite numb and useless, not having had such a strain put upon it since I was so badly smashed at Graspan in 1899. A short rest however brought me round and as I disengaged

myself from the rope (of which it turned out there was several feet to spare) I breathed a heartfelt *Nunc dimittis*: for had I

EGG OF BEARDED VULTURE. NEST IN DARK CAVERN.
From photograph taken with a magnifier at 18 *in. distance*
(Size of egg 3·3 in. × 2·6 in.)

not at last succeeded in the one remaining object of my bird-nesting life?

The persistent run of ill-luck which accompanied me through out this protracted campaign did not even now desert me. For

the numerous photographs which I had obtained with such peculiar difficulty turned out to be failures, owing to the films being defective! Since the cartridges were perfectly fresh and had been properly kept in tin-boxes, this was as unexpected as it was vexatious. In the absence of anything better I give the best of a bad lot. Many of them were entirely obliterated by a black fungus-like growth. But if ill-luck attended me in these repeated attempts, I feel I ought to be peculiarly thankful for having come out unhurt from a series of minor accidents.

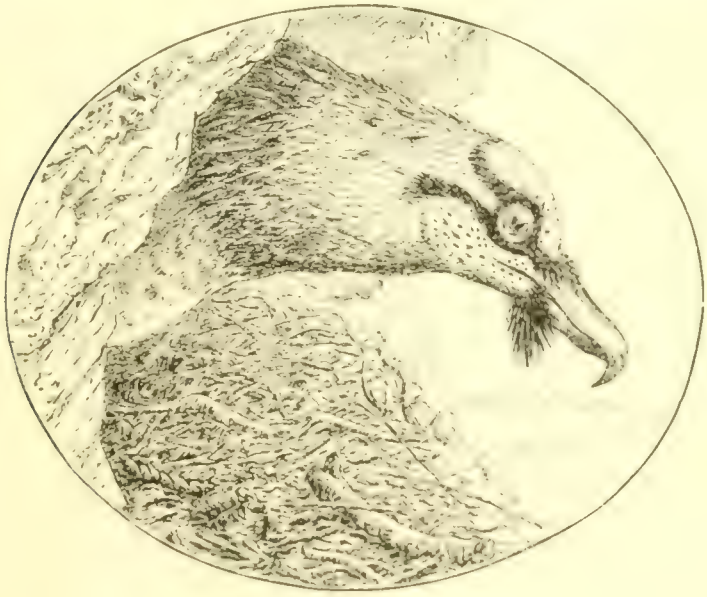
Soon after regaining the point where our mules stood I was rejoined by my companions from above. The whole business had taken just three and a half hours. I then learnt from Hamond that the reason he gave me no more rope when I was clinging to the nest in my first descent was that my whistle signals were indistinguishable. Probably this was due to my being under a big projecting rock combined with the echoes caused by this and the adjacent caverns behind the great limestone buttress, for as soon as I swung out clear he heard my signal "Haul up" distinctly.

Thus ended my long-drawn-out campaign after the Bearded Vultures. In many respects it was not more risky than other similar expeditions and climbs after Eagles' and Vultures' nests. Since however it chanced to involve a series of misadventures and incidents, more or less exciting to the actors, but all eminently illustrative of the ups and downs attending the use of ropes on unknown cliffs, I have described it at length and have also reproduced the sketch I made of the cliff on the spot. There is nothing very novel in what I depict, but the sketch gives a fairly accurate view of this fine cliff which is highly characteristic of the peculiar sites favoured by Bearded Vultures as nesting stations.

A final word as to the behaviour of the old birds. Shortly after leaving the nest when the pistol shots were fired, the female returned and entered it, and did not leave it again until I was

lowered close to it. She then departed and did not return until the whole party had assembled in the valley, some 300 ft. below. So much for the tales of Bearded Vultures attacking those who molest their eggs or young!

As a set-off to my bad fortune in the photographic business on this memorable occasion, I have the gratification to record that, thanks to the skill of one of the staff at the British Museum of Natural History, the fragments of the broken egg were successfully pieced together, with the result that I am now the proud possessor of a pair of beautifully-coloured eggs of the Bearded Vulture, which find a fitting resting-place in my collection in the centre of a tray containing sundry pairs of the handsomely marked eggs of the Neophron!



THE END.

INDEX.

ABERDEEN Terrier and Eagle Owls, 327
Accentor collaris, 305
Accipiter nisus, 176
Acrocephalus turdoides, 99
Aëdon galactodes, 158
Ægialitis curonica, 128
Aguila imperial, 207
„ *negra*, 198, 207
„ *real*, 207
Alauda bætica, 129
„ *brachydactyla*, 129
„ *calandra*, 129
Alcala de las Gazules, 268
Alpargatas, 36
Alpine Accentor, 305
„ Club ropes, 80
Apes' Hill, 239, 310
Aquila adalberti, 196, see White-shouldered Eagle
„ *chrysaëtus*, 355, see Golden Eagle
„ *mogilnik*, 196
„ *rapax*, 197
Ardea purpurea, 95
Ardea ralloides, 112
Ardeola russata, 94
Arzila, 239
Astur palumbarius, 173

BÆTICAN Short-toed Lark, 129
Barbary, 278
Barrosa, 239
Bayuda Desert, 266
Bearded Vulture, 304, 306, 375, 407-457 ; nest of, 374, 424 ; plumage of, 409, 410, 414 ; time of nesting, 410-411 ; flight of, 413 ; encounter with Griffon, 416; young, 441
Bee-eater, 161 ; number of eggs, 163 ; nest of, 163-4 ; habits of, 163-4 ; St. Bee-eater's Day 163 ; eggs of, 163
Bee-hives, cork, 163
Belon, ruins of, 233, 239, 386
Bird-life, Taking of, 4, 6
Birdsnester, true, 7

Birdsnesting, 3 ; author's devotion to, 11-12 ; on Active Service, 17-20 ; preparing for in wild country, camping out and equipment, 21-38 ; in the Spanish Marshes, 91-93, 104-106, 109-112
Birds, stuffed, 4 ; cage, 9
Blackbird, 158 ; eggs, 159 ; in Bonelli's Eagle's nest, 352
Blackcaps, 9
"Black Eagle," 198, 207, 208
Black Kite, 170-173 ; nesting-place of, 171-2 ; nest of, 173
,, Wheatear, 289-291 ; plumage of, 289 ; nest of, 289-291 : eggs of, 291
,, winged Stilt, 206
,, Vulture, 199, 210-232, 414 ; favourite nesting-place of, 210-211 ; plumage, weight, and size of, 213 ; expanse of wing, 213 ; number of eggs, 217 ; nest and eggs of, 225
Bluejackets climb round Rock, 52, 317
Blue Rock Thrush, 284, 287, 289, 291, 317 ; date of nesting, 285 ; eggs of, 289
Bonel, the Brothers, 307
Bonelli's Eagle, 50, 313, 318, 328, 330-354 ; plumage of, 336, 337, 340 ; young, 336-7 ; size, 337 ; nesting-place, 338, 345-6 ; nest of, 339, 342 ; eggs, 339, 342 ; food of, 339 ; kept in confinement, 352-353 ; flight of, 353 ; takes Partridge, 354
,, Warbler, 157, 158
Booted Eagle, 172, 177, 178-185 ; plumage of, 178 ; nesting-places, 179-180 ; nest of, 179, 180 ; eggs of, 180 ; young, 182 ; colour of, 182 ; taming, 182-184 ; flying to Falconer's "lure," 184 ; lost at sea, 185.
Brigandage, 307-309
British Museum of Natural History, 340, 388, 400, 457
Brown-necked Raven, 243
Bruce, James, the Traveller, 410
Bubo ignavus, 311, see Eagle Owl
Buff-backed Egret, 94, 130, see Egret
Bull, in reed beds, 100 ; young bulls, 126 : chased by a, 127 ; dislike for Englishmen, 127-8 ; hunted up a tree, 200-201 ; fighting bulls, 202 ; "mild-mannered" bulls, 202
Bunting, Cirl, 12
,, Common, 129, 267, 305
,, Rock, 305
Bustard, see Great and Little Bustard, 131, 149
Buzzard, Common, 157, 186, 187, 216, 330, 331

CALANDRA Lark, 129, 267
Camels, "Wild," in Spain, 15
Cameras employed, 42-46 ; camera stand, 47
Canvas sling, 81
Carabineros, 295 ; fight with, 296
Carine noctua, 161
Carteia, ruins of, 233
Casting-line and weight, 64-68
Cattle, in reed-beds, 100 ; a "bad cow," 126 ; "Lagartijo," 127 ; herdsmen, 126, 201
Cetti's Warbler, 157 ; favourite nesting-place of, 157 ; eggs of, 157
Chaffinch, 157, 216
Charles V.'s Wall, 287
Chelidon urbica, 283-4
Chiff-chaff, 6, 157

Chough, nesting-place of, 305
Ciconia alba, 94
Circaëtus gallicus, 185, see Short-toed Eagle
Circus æruginosus, 96, see Marsh Harrier
„ *cineraceus*, 104
„ *cyaneus*, 104
„ *macrurus*, 104
Ciscar, Laja del, 86, 87
Cisticola cursitans, 129
Cliff Climbing, 71-90; qualifications, 73; Ropes, their dangers and their uses, 73-78; travelling naturalist and professional cliff-eggers, 79; size and nature of ropes, 79-82; whistle signals, 85-86; author's silk rope, 60, 160; Alpine Club rope, 220, 226
Climbing irons, 68
Coccystes glandarius, 237
Colmenares, 163
Common Blackbird, 158; number of eggs, 159; in Bonelli's Eagle's nest, 352
„ Buzzard, 157, 186, 216, 330, 331
„ Chough, 305
„ Crane, 107; habits, 107-8; line of migration, 109; favourite nesting-places, 109-10; locating nests, 111-117; simulating disablement, 114, 115; nest and eggs, 117-121; young, 122
„ Raven, difficult climb to nest, 60-63, 157, 209, 236, 241-250; number of eggs, 242, 244; puzzling assemblages of, 242; identifying the, 243-4; eggs of, 244; dates of nesting, 245; cunning habits of concealing nesting-place, 245-248, 378-380
„ Swallow, 157, 282, 284
„ Wren, 282; nesting-places, 282; nest of, 282
Contrabandistas, 295-296
Coots' nests, 94, 96, 101
Cork bee-hives, 163
„ Woods, in the, 156-165, 181, 185, 186, 383
Cormorants, 236, 300
Corvus capensis, 19, 20
„ *corax*, 241
„ *tingitanus*, described by Colonel Irby, 243
Coto de Doñana, 15, 171
Cotyle riparia, 282
„ *rupestris*, 282
Crag Martin, 282, 284; nest of, 282-3; eggs of, 283, 284
Crane, 107, see Common Crane
Crested Lark, 10, 11, 129
Cross-breeding cage birds, 11
Crow, South African, 19
Crown Prince Rudolf of Austria, 14; "Wild" camels and Flamingoes, 15; silk rope, 89; young Bearded Vultures, 411
Cueva del Cuervo, 248, 377
Cueva del Gato, 300, 301
Culebrera, 185
Curlew, 105; Stone-, 128

DARTFORD Warbler, 237
Doñana, Coto de, 15, 171
Doroteo, the woodsman, 217-223
Dunalley, Lord, 286

EAGLE, Bonelli's, 330, see Bonelli's Eagle
„ Booted, 178, see Booted Eagle
„ Snake (or Short-toed), 185, see Snake Eagle
„ Golden, 355, see Golden Eagle
„ White-shouldered or Imperial, 196, see White-shouldered Eagle
„ "Black Eagle," 198, 207, 208
Eagle Owl, 186, 311-329, 353, 358; nesting-places, 312, 315; eggs, 315, 318; young, 316; number of eggs, 320-1; prey of, 324-5, 326-7, 328; plumage of, 327; cry of, 329
Eggs, collectors of, 5; exchangers, 5; exchanges, 7, 342; extermination of species, 7-8
Egret, 94, 130
Egyptian Vulture, 75, 248, 372-386, 408; favourite nesting-places, 210, 373, 376-8, 382; plumage of, 273, 372-3, 376; eggs of, 373, 374-5, 384, 385; migration of, 373; food of, 374; nest of, 374; young, 375
Emberiza cia, 305

FALCO peregrinus, 305
Falconry, 10; Bonelli's Eagle used in, 331; Booted Eagles, 182-184
Falcons, 10; Peregrine, 79, 148, 236, 262, 305, 373; and game preserving in Spain, 165
Fantail Warbler, 129
Farquhar, Rear-Admiral Arthur M., 76, 92, 169, 247, 321, 346, 348, 420, 423, 426, 451
"Fauna of South Africa, The," Sclater and Stark's, 433
Felis catus, 239
Fergusson, Major Harry James, 61, 127, 142, 148, 198, 286, 304, 312, 336
Flamingo, 15; eggs, 15; flight of at Trafalgar, 237
Flowers and Plants in Spring, 132, 153, 235, 267; Arbutus, 294; Asphodel, 125; Almond Blossom, 309; Bulrush, 92, 105; Cistus, 269; Convolvulus, 126, 267; Great Mace-reed, 92; Laurestinus, 294; Mediterranean Squill, 125; Oleander, 310; Peonies, 309; Purple Iris, 126; Reeds, 92, 110-111, 113-120; Rhododendron, 294; White Heath, 294
Foxes, 304
Frere, Sir Bartle, 333
Fringilla serinus, 159, see Serin Finch
Frogs, 268

GALERITA cristata, 129
Gallinule, Purple, 99
Gibraltar, Rock-climbing and cave-exploring, 48-57; Ospreys, sites of nests, 252; Blue Rock Thrushes, 286-289; Black Wheatears, 289-290; Eagle Owls in 1776 and 1876, 312; Bonelli's Eagle, 331-332
Glareola torquata, 112-128
Golden Eagle, 196, 197, 203, 207, 301, 337, 339, 355-371, 382, 409; eggs of, 203, 362, 366, 370; weight of, 356; span of wing, 356; nesting-places, 357, 358, 360, 364; food of, 358; nest of, 362
Golden Oriole, 159-160; protective colouring, 159; eggs, 160; nest of, 160-1

Golden Plover, 149
Goldfinch, 11, 157
Goose, Wild, 104, 147; Grey-lag, 104; call bird, 342; tame goose's eggs, 342-344
Goshawk, 10, 173-176; retiring habits, 173-174; eggs of, 174, 176; identifying bird, 175-6
Grass Snakes, 95, 128
Great Bustard, 90, 95, 105, 128, 131-148; habitat, 132-4; question of migration, 134; in its glory, 135-136; mating habits, 136-7; antics of, 136-8; favourite nesting-place, 138-140; number of eggs, 140-3; hatching out, 142-4; weights of, 144-5; flight of, 145-7; encounter with Eagle, 147-8
Great Reed Warbler, 99
„ Spotted Cuckoo, 237
„ „ Woodpecker, 157, 161
„ Titmouse, 157, 216
Grebe, Great Crested, 99
Green Cormorants, 236
Greenfinches, 11
Green Plover, Peewit or Lapwing, 206
Griffon Vulture, 387-406; nest and eggs, 87; favourite nesting-place of, 210; number of eggs, 217; a Griffons' cliff, 273-277; a famous colony, 299, 340; cleanliness of, 388-9; nesting-places, 390, 393, 394; dates of laying, 395; nest-building, 395-6; young, 277, 398; feigning death, 398-400; plumage of, 400; weight of, 401; span of wing, 401; identifying the bird, 402; Golden Eagles and Griffons, 357, 366; "marked" eggs, 394; size of, 398; defending nest, 403; wounded bird attacking, 404; marvellous numbers, 405; habits when resting, 405-426; encounter with Bearded Vulture, 416
Grus communis, 107, see Common Crane
Guadalquivir, marismas of, 14-15
Guardia Civil, 298; admirable corps, 307; method of dealing with brigands, 308; the fate of "Monte Cristo," 309
Gulls, 105, 243, 256
Gypaëtus barbatus, 407, see Bearded Vulture
Gyps fulvus, 387, see Griffon Vulture

Hamond, Lieut. R. Gerald, R.N., 447, 451, 456; Commander Robert N., R.N., 447
Hancock, John, of Newcastle, 4
Hand Cameras employed, 42-46
Harriers, 102, 103, 130, 169, 187, 311; Hen, 104; Pale-chested, 104; nest of young, 105; their spirited defiance, 105-6; and game preserving in Spain, 165
Hawking, 10, 182-4, 331
Hawks, 190, and game preserving in Spain, 165
Herdsmen, 126, 201
Herons, Purple, 95, 96, 98, 101, 102; nests, 96; Common, misnamed Crane, 108
Hirundo rustica, 157
Hoopoe, 161, 237
House Martin, 283, 284, 301
Hume, Allan, "Notes on Indian Birds," 190, 213, 331, 433
Hunt, Edward, 434
Hydrochelidon hybrida, 99, 112, see Whiskered Tern
Hypolais polyglotta, 158

Ibex, 304
Ibis, 243, 373
Imperial Eagle, 196 ; Spanish, 196
Irby, Colonel L. H., 14-15, 21, 87, 104, 109, 134, 141, 158, 161, 162, 173, 174, 189, 192, 197, 199, 213, 214, 234, 243, 245, 292, 313, 331, 357, 409, 410
Irvine, Captain J. D'Arcy, R.N., 229
Ivy and tree-climbing, 177

Jackdaw, 12, 305
Jay, 157

Kestrels, 130, 236, 306, 324, 325
Kites, 169, 190, 216 ; and game preserving in Spain, 165, see Black Kite, Red Kite
Knox's, Rev. A. E., "Ornithological Rambles in Sussex," 14

Lacerta ocellata, 128
Laishley, Richard, "British Birds' Eggs," 12
Laja del Ciscar, 86
Lämmergeyer, see Bearded Vulture, 407
Landseer's "Eagles attacking Swans," 356
Lanius rufus, 159
Lapwing, Peewit, or Green Plover, 314, 324, 325
Larks, 9, 129
La viuda Varéla, 201
Leptoptilus crumeniferus, 386
Lesser Black-backed Gulls, 236, 243
Lilford, Lord, 4 ; visits Captain Verner's Falcons, 10, 14, 15, 21, 68, 140, 168, 173, 214, 287, 409
Limestone cliffs, dangers of old, 303, 347
Linnet, 11, 12
Little Bustard, 105, 149-155 ; beautiful plumage of, 150 ; flight of, 150 ; methods of approaching, 150-1 ; difficulty of finding nests, 152 ; nesting habits, 153 ; number of eggs, 153-4
Little Owl, 161
„ Ringed Plover, 128
Lizards, 169, 182, 186, 187, 193 ; and game preserving in Spain, 165
Locustella luscinioides, 198

Magnifiers, use of, 45
Mallard, 95
Marabou Stork, 386
Marismas of the Guadalquivir, 14, 15
Marsh Harrier, 96, 98, 99, 101, 102, 104 ; young, 106
Marten cat, 380
Martins, 282-284
Meade-Waldo, Edmund G. B., 133
Melodious Willow Warbler, 158
Merlin and Crested Larks, 10
Merops apiaster, 161-164
Milvus ictinus, 166, see Red Kite
„ *migrans*, 170, see Black Kite

Mistle Thrush, 12
Montagu's Harrier, 104
"Monte Cristo," the latest brigand, 307; his fate, 308
Moorish remains, 281, 297
Moorish villages, 296-8
Mustela foina, 380

NAPIER, Major Hon. Robert, 285; Lord, of Magdala, 141, 285
Natural History, British Museum of, 340, 388, 400, 457
Neophron, 387, see Egyptian Vulture
Neophron percnopterus, 372, see Egyptian Vulture
Nests, stone-built, 292-3
Newton, Professor Alfred, 144, 254, 409
Nightingales, 9; in Andalucia, 158
Nisaëtus fasciatus, 330, see Bonelli's Eagle
,, *pennatus*, 178, see Booted Eagle
"Notes on Indian Birds" (Allan Hume), 190, 213, 331, 433

OCELLATED Lizards, 128, 130, 169, 186, 187, 374
Œdicnemus scolopax, 128
Oriole, 159
Oriolus galbula, 159, see Golden Oriole
"Ornithology of the Straits of Gibraltar," Irby's, 14, 313, 409
"Ornithological Rambles in Sussex," Knox's, 14
Orphean Warbler, Western, 158
Ospreys, 236, 251-264, 373, 427; nest, Gibraltar, 51-52; favourite nesting-places of, 253; foot of, 253-4; fishing, 255; eggs of, 256, 263; nest of, 263
Otis tarda, 131, see Great Bustard
,, *tetrax*, 149, see Little Bustard
Owl, Scops, 161; Little, 161; Eagle, 311

PANDION haliaëtus, 251
Parent birds, slaughter of, 6, 8
Partridges, 206, 324, 339, 352, 354, 358; and game preserving in Spain, 165
Pedrero, 290
Peewit, Lapwing, or Green Plover, in White-shouldered Eagle's larder, 206; in Eagle Owls' larders, 314, 324; caught by Eagle Owl, 325
Peregrine Falcon, 10, 79, 236, 305, 373
Petrocossyphus cyanus, 284, see Blue Rock Thrush
Photography in Birdsnesting, 40-47; the advantages of the hand camera, 42-46
Photography, 90, 176, 190-1, 194, 226-8, 248-250, 263-4, 318, 321, 349, 362, 366, 378-9, 400, 403-4, 443-5, 453-4, 455-6
Purga bueyes, 94, 130
Phylloscopus bonellii, 157
Pillars of Hercules, 310
Pipits, 130
Plover, Lesser Ringed, 128; Golden, 149; Green, 314, 324, 325
Porphyrio cæruleus, 99
Powys, Hon. Thomas, 287

Pratincoles, 112, 128
Prehistoric remains, 233, 270, 281
Prittie, Hon. Henry O'C., 286
Puerto de Guadarrama, 231
Purple Gallinule, 99
Purple Heron, 95-98, 102
Pyrrhocorax graculus, 305

QUEBRANTA-HUESOS, 433-434, see Bearded Vulture

RABBITS, 182, 206, 238, 239, 339, 352, 358, and game preserving in Spain
Raven, 241, see Common Raven
Red Kite, 166-170; flight of, 166-168; nest of, 168; trapping old bird, 168
Reptiles, 169, 181, 186
Retriever, in Crane's Nest, 119-120; severs rope on Eagle Owls' cliff, 321-322
Riff Coast, 310
Rock Bunting, 305
Rock Sepulchres, 270-1
Roe deer, 163, 216
Rock Doves, 282, 300, 306, 359
"Rock Eagles," 331
Ronda, 295, 298, 303, 309
Rope-soled shoes (or *Alpargatas*), 36
Ropes, weights and sizes, 80-82; a jambed rope, 424, 426-427; silk rope, 31, 76, 87, 89-90
Rosia Bay 286
Rudolf, Crown Prince, of Austria, 14-15, 89, 171, 195, 204, 411
Rufous Warbler, Western, 158

ST. BEE-EATER'S Day, 163
St. John, Charles, "The Wild Sports of the Highlands," 13
Salvin, Francis Henry, 10
Sand Martin, 282
Saunders, Howard, 21
Savi's Warbler, 198, 204
Saxicola leucura, 289, see Black Wheatear
Sclater, W. L., 432
Scops Owl, 161; seeking nest of, 161
Sea Eagle, 234, 236
Secuestradores, 307
Seebohm, Henry, 203, "British Birds' Nests and Eggs," 390
Selous, F. C., 9
Serin Finch, 157, 159
Serrania de Ronda, 239, 295, 305, 380
Short-eared Owl, 313
Short-toed Eagle, 185
,, Larks, 129
Shrike, Woodchat, 159
Sierra Bermeja, 239

Sierra Blanca, 239
„ de Guadarrama, 215, 223, 228
„ de Libar, 306, 308
„ Nevada, 295, 357, 361, 411
Silk Rope, 31; as a "traveller," 76; on an emergency, 87; Crown Prince Rudolf's, 89; manifold uses, 90
Sison, 149
Sketch book and water-colours, 40
Sketching, 14, 39-41, 47, 318, 336, 338, &c.
Smugglers, 295-96
Snakes, 95, 169, 182, 186, 187, 193; and game preserving in Spain, 165
Snake Eagle, 172, 173, 180, 185-195, 186, 383, 384; size of, 186; weight of, 186; prey of, 186, 187; nest of, 187, 189, 383; eggs of, number and variety, 190; young, 193; trapping a, 194-5
Snipe, 102, 132, 207
Solitario, 284
Soto Gordo, 384
Spanish Imperial Eagle, 196
Spanish Oak, 63, 159
Sparrowhawk, 10, 11, 176-177
Squacco Heron, 112
Stark, Arthur C., 109, 198, 206, 211, 214, 408, 409, 411, 413, 433, 453
Stork, 94, 109, 128
Stone-Curlew, 128
Subterranean passage through cliff, 275-276
„ Stream, 300-302
Swallow, 284
Sylvia orphea, 158

TANGIER Raven, 243, 244
Tawny Eagle, 197
Teal, 206
Tern, Whiskered, 99, 112
Thompson, R., and Bonelli's Eagle, 331
Titmouse, Great, 157
Tobacco growing, 296
Trafalgar, 237; Sierra above, 233-4; cliffs of, 235-240; Cape, 234; Bay of, 268
Traps, 35; a merciful plan, 35-36
Trapping, 35-36; Red Kite, 168; Booted Eagle, 182; Snake Eagle, 194-195; Common Raven, 224; Egyptian Vulture, 384-385
Tree Climbing, art of, 58-60; Tom Brown's advice, 59; use of ropes, 63-68; risks of climbing irons, 68; ropes and irons in combination, 69; dress and equipment, 69-70; ivy risks, 177
Tropidonotus natrix, 128
„ *viperinus* 95

UPUPA epops, 161, 237

VARÉLA, la viuda, 201

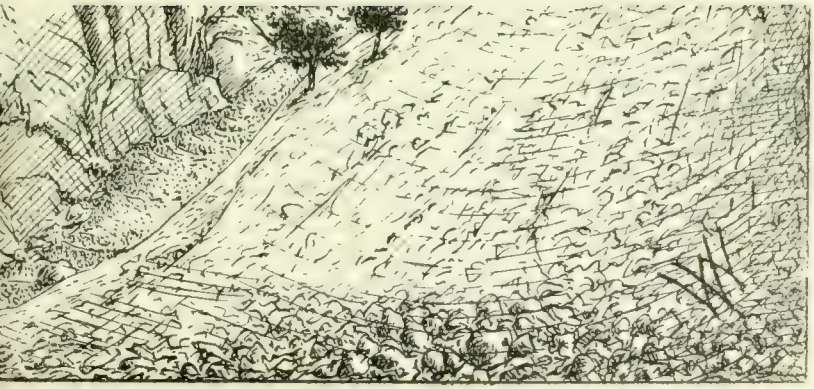
Vegas or Plains, 123-128, 130, 132
Verner, Colonel William J., cage birds, Nightingales and Blackcaps, 9; a keen Falconer, 10; Hawks and Falcons, 10; Merlins and Crested Larks, 10-11; breeder of hybrids, 11; early lessons in birdsnesting, 11-13
Vertigo, author's remedy, 49-50
Vipera latasti, 95, see Snakes
Viper, 95
Viperine Grass Snake, 95
Vision of birds, relative quickness of, 105
Vultur monachus, 210, see Black Vulture
Vulture, Bearded, 407, see Bearded Vulture
,, Black, 210, see Black Vulture
,, Egyptian (or Neophron), 372, see Egyptian Vulture
,, Griffon, 387, see Griffon Vulture

Wagtails, 130
Warblers, 157-158
Water-colour sketching and birdsnesting, 14, 39-41, 47, 318, 336, 338
Water-tortoise, 268
Weaver-bird, Black-and-red, 18
Western Orphean Warbler, 158
Western Rufous Warbler, 158
Wheatear, Black, 289, see Black Wheatear
Whiskered Tern, 99, 112
Whistle signals, 85-86
White, Rev. Gilbert, of Selborne, 252, 312
White, Rev. John, 252, 312
White-shouldered Eagle, 147, 185, 196-209, 216, 257; plumage of, 197-8, 199; nest of, 199; length of, 199; weight of, 199; eggs of, 203; favourite food of, 206
White storks, 94, 128, 109
Wigeon, 102, 206, 325
Wilczek, Count Hans, 89
"Wild" Camels in Spain, 15
Wild Duck, 95
,, Birds, study of, 23
,, Cat, 239
,, Goose, 104, 147, 187
"Wild Spain," 21
Willow Warbler, 157
Wolley, John, on Cranes, 117, 122
Wolves, 304
Woodchat Shrike, 159; eggs of, 159
Woodpecker, Great Spotted, 157, 161
Wood Warbler, 157
Woods, Cork, 156-165, 181, 185, 186, 383

Yarrell, William, on Osprey's foot, 254

Zoological Gardens, 286

Printed by John Bale, Sons & Danielsson, Ltd., Great Titchfield Street, London, W.



The general "lead" of the ropes used in the various descents are shown by lines drawn from the Lowering Parties to the Nests and Landing places below.

WILLOUGHBY VERNER.

General View of limestone Cliff, a Nesting Station of the Bearded Vulture.

Drawn from sketches made on the spot in 1906, 1907 and 1908. Details from photographs. Heights reckoned by aneroid and checked by rope measurement

Notes on Climbs. 1st, 1906, 4th, 1908.
Feet
Summit of Cliff 540
(Approximate height above sea level, 4,370 ft.)
Lowering Party (No. 1 and No. 4). 470
Farquhar's Ledge 340
The "Artichoke" (Point where rope jambed). 330
Position of climber when rope jambed 265
Nest of Bearded Vulture. No. 1 250
Landing place below Nest No. 1 200
Foot of Cliff 0
(Approximate height above sea level, 3,830 ft.)
Notes on Climbs. 2nd, 1906, 3rd, 1907
Feet
300 Lowering Party No. 2 and No. 3.
305 Olive tree.
260 Bearded Vulture's Nest No. 2.
230 Landing place below Nest No. 2.
170 Main Terrace
150 Top of talus.

The general "lead" of the ropes used in the various descents are shown by lines drawn from the Lowering Parties to the Nests and Landing places below

Willoughby Verner.

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 00703 1511